

**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, 2003

OR

**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: 0-24085

**AXT, Inc.**

*(Exact name of registrant as specified in its charter)*

**Delaware**

*(State or other jurisdiction of  
incorporation or organization)*

**94-3031310**

*(I.R.S. Employer  
Identification No.)*

**4281 Technology Drive,  
Fremont, California**

*(Address of principal executive offices)*

**94538**

*(Zip Code)*

**Registrant's telephone number, including area code:**

**(510) 683-5900**

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

**None**

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

**Common Stock, \$.001 par value**

Indicate by checkmark 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 checkmark 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. Yes  No

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

The aggregate market value of the voting stock held by non-affiliates of the registrant, based upon the closing sale price of the common stock on June 30, 2003 as reported on the Nasdaq National Market, was approximately \$20,120,644. Shares of common stock held by each officer, director and by each person who owns 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not a conclusive determination for other purposes.

As of January 31, 2003, 22,960,606 shares, \$.001 par value, of the registrant's common stock were outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the definitive proxy statement for the registrant's 2004 annual meeting of stockholders to be filed with the Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this form are incorporated by reference into

## TABLE OF CONTENTS

<b>PART I</b>		
<a href="#">Item 1.</a>	<a href="#">Business</a>	1
<a href="#">Item 2.</a>	<a href="#">Properties</a>	9
<a href="#">Item 3.</a>	<a href="#">Legal Proceedings</a>	9
<a href="#">Item 4.</a>	<a href="#">Submission of Matters to a Vote of Security Holders</a>	10
<b>PART II</b>		
<a href="#">Item 5.</a>	<a href="#">Market for Registrant's Common Equity and Related Stockholder Matters</a>	10
<a href="#">Item 6.</a>	<a href="#">Selected Consolidated Financial Data</a>	10
<a href="#">Item 7.</a>	<a href="#">Management's Discussion and Analysis of Financial Condition and Results of Operations</a>	13
<a href="#">Item 7A.</a>	<a href="#">Quantitative and Qualitative Disclosures About Market Risk</a>	34
<a href="#">Item 8.</a>	<a href="#">Consolidated Financial Statements and Supplementary Data</a>	34
<a href="#">Item 9.</a>	<a href="#">Changes in and Disagreements with Accountants on Accounting and Financial Disclosures</a>	36
<a href="#">Item 9A.</a>	<a href="#">Controls and Procedures</a>	36
<b>PART III</b>		
<a href="#">Item 10.</a>	<a href="#">Directors and Executive Officers of the Registrant</a>	37
<a href="#">Item 11.</a>	<a href="#">Executive Compensation</a>	37
<a href="#">Item 12.</a>	<a href="#">Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</a>	37
<a href="#">Item 13.</a>	<a href="#">Certain Relationships and Related Transactions</a>	37
<a href="#">Item 14.</a>	<a href="#">Principal Accountant Fees and Services</a>	38
<b>PART IV</b>		
<a href="#">Item 15.</a>	<a href="#">Exhibits, Financial Statement Schedules, and Reports on Form 8-K</a>	39
<a href="#">EXHIBIT 10.17</a>		
<a href="#">EXHIBIT 31.1</a>		
<a href="#">EXHIBIT 31.2</a>		
<a href="#">EXHIBIT 32.1</a>		
<a href="#">EXHIBIT 32.2</a>		

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## PART I

*Some of the information set forth in this annual report are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements, including statements as to industry trends, our future expectations and other matters that do not relate strictly to historical facts, are based on certain assumptions made by management. These statements are often identified by the use of words such as “may,” “will,” “expect,” “plans,” “believe,” “anticipate,” “intend,” “could,” “estimate,” or “continue” and similar expressions or variations, and are based on the beliefs and assumptions of our management based on information then currently available to management. Such forward-looking statements are subject to risks, uncertainties and other factors that could cause actual results to differ materially from future results expressed or implied by such forward-looking statements. Important factors that could cause actual results to differ materially from the forward-looking statements include, among others, the risks discussed below under “Risks Related to Our Business.” These factors are not intended to represent a complete list of the general or specific factors that may affect us. It should be recognized that other factors, including general economic factors and business strategies, may be significant, presently or in the future, and may affect us to a greater extent than indicated. Such forward-looking statements speak only as of the date on which such statements are made; except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements.*

### Item 1. **Business — Overview**

We design, develop, manufacture and distribute high-performance compound semiconductor substrates comprising gallium arsenide (GaAs), indium phosphide (InP) and germanium (Ge). Our substrate products are used primarily in wireless communications, lighting display applications, and fiber optic communications. We believe our proprietary vertical gradient freeze, or VGF, technique for manufacturing compound semiconductor substrates provides significant benefits over other methods and has enabled us to become a leading manufacturer of compound semiconductor substrates. We pioneered the commercial use of VGF technology to manufacture GaAs substrates and subsequently used VGF technology to manufacture substrates from InP, and Ge. Some of our competitors followed our lead by developing their own versions of VGF technology. Customers for our substrates include United Epitaxy Company, Motorola, Agilent Technologies, Samsung, EMCORE, Kopin, IQE, and Sumika. Over the past four years, we have implemented an initiative, which is now largely complete, to reduce the cost of manufacturing our substrates by moving most of our operations to China and by investing in sources of low cost raw materials.

On June 24, 2003, the Company’s Board of Directors approved management’s plan to exit the Company’s unprofitable opto-electronics business. The disposition was a result of continuing operating losses and negative cash flows from the division and significant uncertainty regarding future profitability.

We were incorporated in California in December 1986 and reincorporated in Delaware in May 1988. We changed our name from American Xtal Technology, Inc. to AXT, Inc. in July 2000. Our principal offices are located at 4281 Technology Drive, Fremont, California 94538, and our telephone number at this address is (510) 683-5900. Our web site is [www.axt.com](http://www.axt.com); however, the information on our web site does not constitute a part of this annual report on Form 10-K and is not incorporated herein. We make available, free of charge, on or through our web site, our annual, quarterly and current reports, and any amendments to those reports.

### **Industry Background**

Historically, most semiconductors were created on a single crystal base material, or substrate, of silicon. Today, however, many electronic and opto-electronics semiconductors are being developed with requirements that exceed the capabilities of silicon. These semiconductors address the continually increasing demand to send, receive and display information on high-speed wireless and wireline networks. This demand creates a growing need for power-efficient high-performance semiconductors that can operate at high frequencies and can be produced cost-effectively in large volumes. These semiconductors enable the growth and development of a wide range of end user applications. For example, Gartner, Inc., an independent research firm, expects

[Table of Contents](#)

worldwide mobile terminal production to grow from approximately 510 million units in 2003 to approximately 560 million units in 2004.

Other examples of applications for these systems include:

- voice and high-speed wireless data systems;
- infrared emitters and optical detectors in computer systems;
- fiber optic networks and optical systems within these networks;
- selected wi-fi networks
- solid-state lighting, including exterior and interior automobile lighting; and
- satellite communications systems.

As a result of the limitations of silicon-based technologies, semiconductor device manufacturers use compound semiconductor substrates to improve the performance of semiconductor devices and to enable these new applications. This use occurs even though these compound semiconductor substrates are more expensive than silicon. Compound semiconductor substrates are composed of multiple elements that include a metal, such as gallium, aluminum or indium, and a non-metal, such as arsenic, phosphorus or nitrogen. The resulting compounds include gallium arsenide, indium phosphide and gallium nitride. Advantages of devices manufactured on compound substrates over devices manufactured using silicon substrates include:

- operation at higher speeds;
- lower power consumption;
- less noise and distortion; and
- opto-electronic properties that enable devices to emit and detect light.

A key step in producing a compound semiconductor substrate is to grow a crystal of the materials. Historically, two processes were used to grow crystals: the Liquid Encapsulated Czochralski, or LEC, technique and the Horizontal-Bridgeman, or HB, technique. We believe two trends reduced the appeal of these techniques: more semiconductor devices are being formed using an epitaxial process and semiconductor device manufacturers are switching their production lines to larger diameter substrates, including six-inch diameters for electronic device applications and three- and four-inch for opto-electronic device applications. The LEC and HB techniques each have difficulties producing high quality, low-cost compound semiconductor substrates for epitaxial processing. Substrates produced using the LEC technique have a high volume of defects as size increases beyond four-inches in diameter. The HB technique has been unable to reliably produce substrates more than three-inches in diameter.

We introduced our VGF technique in 1986 to respond to the limitations inherent in the LEC and HB techniques, and, in recent years, some of our competitors who previously relied on the LEC or HB methods have also developed their own versions of VGF. We believe that a majority of the substrates sold commercially in 2003 for electronic device applications were manufactured using the VGF or similar techniques.

Compound semiconductor substrates enable the development of a wide range of electronic products including power amplifiers and radio frequency integrated circuits used in wireless handsets. Compound substrates can also be used to create opto-electronic products including high brightness light emitting diodes, or HBLEDs, and vertical cavity surface emitting lasers, or VCSELs, used in solid-state lighting and fiber optic communications, respectively.

## The AXT Advantage

We are a leading developer and supplier of high-performance compound semiconductor substrates. There are three key causes of our success:

*Our VGF technology is a competitive advantage.* We pioneered the commercial use of VGF technology to manufacture GaAs substrates and we believe that through the use of VGF we became a leading worldwide supplier of GaAs substrates. Our VGF process produces substrates with high mechanical strength and physical and chemical uniformity, as well as low crystal defect densities. The following changes in our customers' technologies are increasing the share of substrates sold with these features:

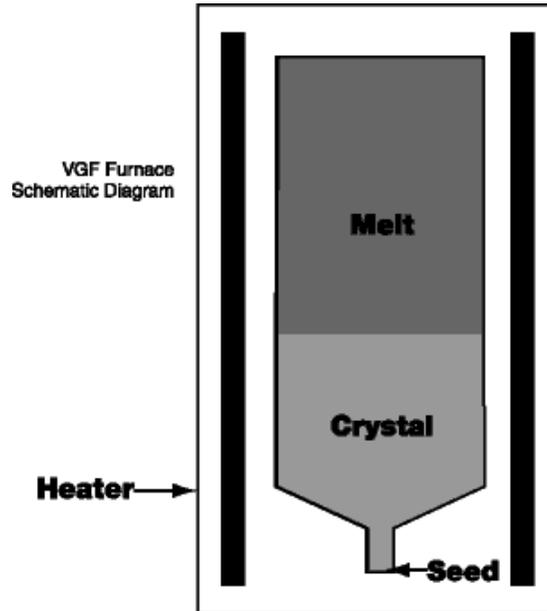
- *Greater use of epitaxy rather than ion implantation.* Many of the newest generation of high-performance semiconductor devices for fiber optic and wireless communications applications, including heterojunction bipolar transistors, or HBTs, and pseudomorphic high electron mobility transistors, or PHEMTs, are popular because they offer lower power consumption and better device linearity than their predecessors. These devices are created using epitaxial processed substrates. Our VGF substrates are more suitable for these applications than are products manufactured using LEC and HB technologies, and competing materials such as silicon germanium, or SiGe.
- *Switch to six-inch diameter wafers.* Many semiconductor device manufacturers switched their GaAs production lines to six-inch diameter substrates in order to reduce unit costs and increase capacity. We were among the first competitors able to deliver large volumes of six-inch diameter VGF substrates and retain a significant amount of manufacturing capacity for this product.
- *Customer technology independence.* Our semiconductor device manufacturing customers often compete among themselves. For example, several of our customers compete for technological leadership in the wireless handset market. These customers or end-users all manufacture their devices on GaAs substrates. We are, therefore, largely immune from the effects of such competition and benefit from an overall need for faster, more power efficient electronic and opto-electronic devices.

*Some customers specify VGF substrates.* Our wafers are qualified with many of the key suppliers of GaAs and InP semiconductor devices. The qualification process, which is lengthy and must be repeated for each customer, can be a barrier to entry for a new material or supplier. Furthermore, certain of our customers now effectively specify that they will only accept VGF-grown or equivalent substrates for their manufacturing processes. The lengthy qualification period benefits us when we are already qualified with a customer, but acts as a barrier to entry for those customers with which we are not qualified.

*Our low-cost manufacturing is an advantage.* In 1998, we began moving portions of our substrate manufacturing operations to China, to benefit from a combination of lower costs for facilities, labor and materials than we encounter in the United States. That move continued and as of the end of 2003, most of our substrate manufacturing activities occur in China. We have also made some strategic investments in raw materials producers, including one that produces gallium, that provide us with a secured and low cost source of important materials and enables us to market surplus production to others. We believe this provides us with a cost advantage vis-à-vis our competitors, which do not enjoy similar arrangements.

## Technology

Our core technologies include our proprietary VGF technique used to produce high quality crystals that are processed into compound substrates, and our gallium extraction technology which allows us to extract raw gallium from aluminum ore.



Our VGF technique is designed to control the crystal-growth process with minimal temperature variation and is the technique we use to produce our GaAs, InP and Ge substrates. Unlike traditional techniques, our VGF technique places the hot compound melt above the cool crystal, thereby reducing the turbulence at the interface of the melt and the solid crystal, compared with the LEC technique in which the melt and crystal are inverted. The temperature gradient between the melt and the crystal in the VGF technique is significantly lower than in traditional techniques. These aspects of the VGF technique enable us to grow crystals that have a relatively low defect density and high uniformity. The crystal and the resulting substrate are mechanically strong, resulting in lower breakage rates during a customer's manufacturing process. Since the temperature gradient is controlled electronically rather than by physical movement, the sensitive crystal is not disturbed as it may be during some competitors' VGF-like growth processes. In addition, the melt and growing crystal are contained in a closed chamber, which isolates the crystal from the outside environment to reduce potential contamination. This substrate isolation allows for more precise control of the gallium-to-arsenic ratio, resulting in better consistency and uniformity of the crystals.

Our VGF technique offers several benefits when compared to traditional crystal growing technologies. The Liquid Encapsulated Czochralski, or LEC, technique is the traditional method for producing semi-insulating GaAs substrates for electronic applications. During the LEC process, the crystal is grown by dipping a seed crystal through molten boric oxide into a melt and slowly pulling the seed up into the cool zone above the boric oxide where the crystal hardens. Unlike the VGF technique, the LEC technique is designed so that the hotter GaAs melt is located beneath the cooler crystal, resulting in greater turbulence in the melt, and at a temperature gradient that is significantly higher than the VGF technique. The turbulence and high temperature cause LEC-grown crystals to have a higher dislocation density than VGF-grown crystals, resulting in a higher rate of breakage during the device manufacturing process. As an open process, the LEC technique also results in greater propensity for contamination and difficulty controlling the ratio of gallium to

[Table of Contents](#)

arsenic. It requires large, complex electro-mechanical systems that are expensive and require highly skilled personnel to operate. Strategy Analytics, a third-party market research firm, estimated that approximately 60 percent of the GaAs substrates sold in 2002 by all competitors to customers that manufacture electronic devices were manufactured using VGF or similar techniques. They projected that VGF's share would increase to approximately 70 percent by 2007.

Our VGF technique also offers advantages over the Horizontal-Bridgeman, or HB, technique, for producing semi-conducting GaAs substrates for opto-electronic applications. The HB technique holds the GaAs melt in a semi-cylindrical container, causing crystals grown using the HB method to have a semi-circular, or D-shaped, cross-section. Accordingly, more crystal material is discarded when the D-shaped substrate is subsequently trimmed to a round shape. In addition, crystals grown using the HB technique have a higher defect density than VGF-grown crystals. The HB technique cannot be used cost-effectively to produce substrates greater than three inches in diameter. The HB technique houses the GaAs melt in a quartz container during the growth process, which can contaminate the GaAs melt with silicon impurities, making it unsuitable for producing semi-insulating GaAs substrates.

The following table provides a comparison of these three techniques: LEC remains about 40% of the semi-insulating market and HB is still present in the semi-conducting market.

	VGF	HB	LEC
Substrate applications	Electronic and opto-electronic	Opto-electronic	Electronic
Largest wafer size available	6"	3"	6"
Stress/defect levels	Very Low	Low	High
Crystal purity	Good	Poor	Good
Applicability to multiple materials	GaAs, InP, Ge	GaAs	GaAs, InP, GaP
Equipment and labor cost	Very Low	Low	High
Amount of waste material	Very Low	High	Low
Equipment flexibility	Versatile	Limited	Limited
Equipment downtime	Minimal	Moderate	High
Number of competitors	Several	Declining	Declining

**Products**

We design, develop, manufacture and distribute high-performance semiconductor substrates. The table below sets forth our products and selected applications:

Product	Applications
<b>Substrates</b>	<b>Electronic</b>
GaAs	<ul style="list-style-type: none"> <li>• Cellular phones</li> <li>• Direct broadcast television</li> <li>• High-performance transistors</li> <li>• Satellite communications</li> </ul>
	<b>Opto-electronic</b>
	<ul style="list-style-type: none"> <li>• LEDs</li> <li>• Lasers</li> <li>• Optical couplers</li> </ul>
InP	<ul style="list-style-type: none"> <li>• Fiber optic communications</li> <li>• Satellite communications</li> <li>• High-performance transistors</li> <li>• Automotive collision avoidance radars</li> </ul>
Ge	<ul style="list-style-type: none"> <li>• Satellite solar cells</li> </ul>

*Substrates.* We currently sell compound substrates manufactured from GaAs and InP, as well as single-element substrates manufactured from Ge. We supply GaAs substrates in two-, three-, four-, five- and

[Table of Contents](#)

six-inch diameters. We manufacture InP substrates in two-, three- and four-inch diameters and Ge substrates in four-inch diameters.

*Materials.* We sell 99.99% pure gallium. We began selling Ga in 2001, primarily through our majority owned subsidiary, Beijing Ji Ya Semiconductor Material Company, Ltd. We sell primarily to re-processors who improve the purity of the gallium. In 2003 sales of gallium were approximately \$3.3 million.

**Customers**

We sell our compound semiconductor substrates and materials worldwide. Our customers include:

Advanced Epitaxy Technology	Kingmax	Sumika
Agilent Technologies	Kopin	Triquent Semiconductor
Coherent Tutcore	Motorola	Uni Light Technology
EMCORE	Osram	Visual Photonics Epitaxy
Honeywell	Opto-Power	United Epitaxy Company
IQE, Inc.	Procomp Informatics	Xiamen Shanan Electronics
Isotech	Recapture Metals	

Historically, we have sold a significant portion of our products in any particular period to a limited number of customers. No customer represented greater than 10% of product revenues for the years ended December 31, 2003, 2002 and 2001. The company's top five customers represented 28.9% of product revenue for the year ended December 31, 2003, 31.4% of product revenue for the year ended December 31, 2002, and 31.1% of product revenue for the year ended December 31, 2001. We expect that sales to certain customers will continue to comprise a significant portion of our revenue in the future.

**Manufacturing, Raw Materials and Supplies**

We believe that our results are partially due to our manufacturing efficiency and high product yields and we continually emphasize quality and process control throughout our manufacturing operations. We perform our substrate manufacturing operations at our facilities in Beijing, China and Fremont, California. As part of our plan to reduce substrate manufacturing costs, we shifted the vast majority of our manufacturing processes to our facilities in China, where costs are generally lower, by the end of 2003. We currently perform research and development and limited manufacturing in our Fremont, California facilities. We believe that our capital investment and subsequent operating costs are lower for our manufacturing facilities in China relative to the U.S. Many of our manufacturing operations are fully automated and computer monitored or controlled, enhancing reliability and yield. We use proprietary equipment in our substrate manufacturing operations to protect our intellectual property and control the timing and pace of capacity additions. All of our manufacturing facilities are ISO 9001 or 9002 certified.

Although we purchase supply parts, components and raw materials from several domestic and international suppliers, we depend on a single or limited number of suppliers for certain critical materials used in the production of our substrates, such as quartz tubing, polishing solutions, and paralytic boron nitride. We generally purchase these materials through standard purchase orders and not pursuant to long-term supply contracts. Although we seek to maintain sufficient inventory levels of certain materials to guard against interruptions in supply and to meet our near term needs, and have to date been able to obtain sufficient supplies of materials in a timely manner, there may be shortages of certain key materials, such as gallium. Accordingly, to help ensure continued supply of materials, we formed joint ventures with and made investments in some suppliers of key raw materials required to manufacture our products, including gallium. We believe that these joint ventures and investments will be advantageous in procuring materials to support our growth. In addition, excess capacity is marketed to others.

## Sales and Marketing

We advertise in trade publications, distribute promotional materials, conduct marketing and sales programs, and participate in industry trade shows and conferences in order to raise market awareness of our products. We sell our substrate products through our direct sales force in the U.S. and Japan and through independent sales representatives in France, Japan, South Korea, Taiwan and the United Kingdom. Our direct sales force consists of sales engineers who are knowledgeable in the manufacture and use of compound and single-element substrates. Our sales engineers work with customers during all stages of the substrate manufacturing process, from developing the precise composition of the substrate through manufacturing and processing the substrate to the customer's exact specifications. We believe that maintaining a close relationship with customers and providing them with ongoing technical support improves customer satisfaction and will provide us with a competitive advantage in selling other substrates to our customers. The substrate division launched a program in late 2000 with selected customers in which we guaranteed that certain volumes of six-inch GaAs and other substrates would be delivered on specific dates and the customer made a prepayment for part of the value of its order. Several major customers participate in this program. At December 31, 2003, the unearned pre-payments we retained under this program equaled \$1.0 million. We do not expect to continue this program after the pre-payments currently in hand are utilized by customers.

*International Sales.* International sales are an important part of our business. In the year ended December 31, 2003, sales to customers outside of the United States accounted for 65.9% of our revenue, as compared with 43.9% in 2002 and with 47.5% in 2001. The primary markets for sales of our products outside of the United States include countries in Asia and Western Europe. Our ability to sustain and increase our international sales involves significant risks, including volatile political, social and economic instabilities abroad, possible fluctuations in currency exchange rates, and changes in tariffs, import restrictions or other trade barriers.

## Research and Development

To maintain and improve our competitive position, we focus our research and development efforts on designing new proprietary processes and products, improving the performance of existing products and reducing manufacturing costs. We have assembled a multi-disciplinary team of highly skilled scientists, engineers and technicians to meet our research and development objectives.

Our current substrate research and development activities focus on continued development and enhancement of GaAs, InP and Ge substrates, including improved yield, enhanced surface characteristics and uniformity, greater substrate strength and increased crystal length. During 2003 we experienced surface quality problems with our GaAs substrates for some customers.

Research and development expenses were \$1.3 million in 2003, compared with \$2.3 million in 2002, and \$3.9 million in 2001. We believe that our current rate of expenditure can enable us to achieve our research and development goals.

## Competition

The semiconductor substrate industry is characterized by rapid technological change and price erosion, as well as intense foreign and domestic competition. We believe we currently have a leading position in the existing markets for compound semiconductor substrates primarily as a result of our expertise in VGF technology. However, we believe we face actual and potential competition from a number of established domestic and international companies who have advantages not available to us.

We believe that the primary competitive factors in the markets in which our substrate products compete are:

- quality;
- price;
- performance;

## [Table of Contents](#)

- meeting customer specifications; and
- customer support and satisfaction.

Our ability to compete in target markets also depends on factors such as:

- the timing and success of the development and introduction of new products and product features by us and our competitors;
- the availability of adequate sources of raw materials; and
- protection of our products by effective use of intellectual property laws and general economic conditions.

Our primary competition in the market for compound semiconductor substrates includes Freiberger, Japan Energy and Sumitomo Electric. In addition, we also face competition from compound semiconductor device manufacturers that produce substrates for their own internal use, including Hitachi, and from companies such as IBM that are actively developing alternative compound semiconductor materials.

### **Protection of our Intellectual Property**

Our success and the competitive position of our VGF technique depend on our ability to maintain trade secrets and other intellectual property protections. We rely on a combination of patents, trademark and trade secret laws, non-disclosure agreements and other intellectual property protection methods to protect our proprietary technology. We believe that, due to the rapid pace of technological innovation in the markets for our products, our ability to establish and maintain a position of technology leadership depends as much on the skills of our development personnel as upon the legal protections afforded our existing technologies. To protect our trade secrets, we take certain measures to ensure their secrecy, such as executing non-disclosure agreements with our employees, customers and suppliers. However, reliance on trade secrets is only an effective business practice insofar as trade secrets remain undisclosed and a proprietary product or process is not reverse engineered or independently developed.

To date, we have been issued 4 U.S. patents and have 4 U.S. patent applications pending, which relate to our VGF products and processes. We have 9 patent applications pending (in PCT/national stage process) in Europe, Canada, China, Japan and South Korea which are based on our U.S. patents that relate to our VGF processes. We have 1 issued foreign patent.

### **Environmental Regulations**

We are subject to federal, state and local environmental laws and regulations. These laws, rules and regulations govern the use, storage, discharge and disposal of hazardous chemicals during manufacturing, research and development and sales demonstrations. If we fail to comply with applicable regulations, we could be subject to substantial liability for clean-up efforts, personal injury and fines or suspension or cessation of our operations. We cooperated with the California Occupational Safety and Health Administration, or Cal-OSHA, in an investigation primarily regarding impermissible levels of potentially hazardous materials in certain areas of our manufacturing facility in Fremont, California. In May 2000, Cal-OSHA levied a fine against us in the amount of \$313,655 for alleged health and safety violations. In March 2001, we settled this claim in the amount of \$200,415, and have put in place engineering, administrative and personnel protective equipment programs to address these issues. On May 1, 2001, the Santa Clara Center for Occupational Safety and Health (SCCOSH) filed a complaint for injunctive relief and civil penalties against us alleging violations of California Business Professions Code 17200 et seq., and Health and Safety Code section 25249 et seq. as a result of our use of arsenic and inorganic arsenic compounds in our workplace. We reached a settlement with SCCOSH during 2002.

### **Employees**

As of December 31, 2003, we had 972 employees, of whom 818 were principally engaged in manufacturing, 141 in sales and administration, and 13 in research and development. Of these employees, 119

[Table of Contents](#)

are located in the U.S., 852 in China and 1 in Japan. As a result of shifting more of our substrate manufacturing to China, we implemented headcount reductions in our Fremont, California facilities, and expect further reductions as our shift of manufacturing activities to China is completed. Our employees are not represented by a union and we have never experienced a work stoppage. Although morale has been affected by our workforce reductions, we consider our relations with our employees to be good.

**Item 2. Properties**

Our principal properties as of March 15, 2004 are as follows:

<u>Location</u>	<u>Square Feet</u>	<u>Principal Use</u>	<u>Ownership</u>
Fremont, CA	80,000	Production	Owned
Fremont, CA	14,441	Administration	Operating lease, expires May 2005
Fremont, CA	9,280	Warehouse	Operating lease, expires June 2005
Fremont, CA	24,100	Warehouse	Operating lease, expires July 2006
Fremont, CA	55,000	Production and Administration	Operating lease, expires March 2013
Monterey Park, CA	22,000	Vacant	Owned; available for sale
El Monte, CA	5,600	Production	Operating lease, expires December 2006
Beijing, China	31,000	Production and Administration	Owned
Beijing, China	31,000	Production	Owned
Beijing, China	32,000	Production	Owned
Beijing, China	16,000	Housing	Owned
Beijing, China	34,000	Production	Owned
Beijing, China	48,000	Production	Owned
Beijing, China	22,000	Production and Administration	Owned
Beijing, China	53,000	Production	Owned; under construction
Xianshee, China			Owned by Beijing Ji Ya Semiconductor Materials, Co., Ltd.
	56,500	Production	
Xianshee, China			Owned by Beijing Ji Ya Semiconductor Materials, Co., Ltd.
	7,500	Administration	
Xianshee, China			Owned by Beijing Ji Ya Semiconductor Materials, Co., Ltd.
	1,000	Administration	
Nanjing, China	22,000	Production	Owned by Nanjing Jin Mei Gallium Co., Ltd.
Nanjing, China	5,700	R&D and Administration	Owned by Nanjing Jin Mei Gallium Co., Ltd.
Nanjing, China	3,900	Production	Owned by Nanjing Jin Mei Gallium Co., Ltd.
Beijing, China			Owned by Beijing Bo Yu Semiconductor Vessel Craftwork Technology
	7,600	Production and Administration	

We consider each facility to be in good operating condition and adequate for its present use, and believe that each facility has sufficient plant capacity to meet its current and anticipated operating requirements.

**Item 3. Legal Proceedings**

From time to time we are involved in judicial or administrative proceedings concerning matters arising in the ordinary course of our business. We do not expect that any of these matters, individually or in the aggregate, will have a material adverse effect on our business, financial condition, cash flows or results of operation.

[Table of Contents](#)

On April 15, 2003, Sumitomo Electric Industries, Ltd., (SEI) filed a complaint in the Tokyo District Court, Civil Division against us and our Japanese distributor alleging patent infringement of two patents held by SEI in Japan. The suit seeks penalties from AXT in the amount of \$1.67 million plus interest and court costs and the cessation of AXT's sales of gallium arsenide substrates in Japan. AXT intends to defend itself vigorously in these lawsuits and continues to sell its products in Japan.

On June 11, 2003, Cree, Inc. filed a complaint in the United States Court for Northern District of California against us alleging patent infringement. The complaint sought damages and injunction against infringement. On July 23, 2003, we filed a counter complaint in the United States Court for Northern District of California, denying any patent infringement and alleging that Cree's actions were intentionally designed to interfere with our prospective business relationships. We reached an agreement with Cree resolving the disputes between us and signed a settlement agreement on March 5, 2004. The resolution of the disputes did not have a material adverse impact on the Company's consolidated financial position or results of operations.

**Item 4. Submission of Matters to a Vote of Security Holders**

None

**PART II**

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

Our common stock has been trading publicly on the Nasdaq National Market under the symbol "AXTI" since May 20, 1998, the date we consummated our initial public offering. The following table sets forth, for the periods indicated, the range of quarterly high and low closing sales prices for our common stock on the Nasdaq National Market.

	High	Low
Fiscal 2003		
First Quarter ended March 31, 2003	\$ 1.950	\$0.670
Second Quarter ended June 30, 2003	\$ 1.650	\$0.680
Third Quarter ended September 30, 2003	\$ 3.120	\$1.200
Fourth Quarter ended December 31, 2003	\$ 3.420	\$1.890
Fiscal 2002		
First Quarter ended March 31, 2002	\$16.890	\$8.850
Second Quarter ended June 30, 2002	\$ 11.600	\$7.000
Third Quarter ended September 30, 2002	\$ 8.390	\$2.080
Fourth Quarter ended December 31, 2002	\$ 2.820	\$0.970

As of December 31, 2003, there were 121 holders of record of our common stock. Because many shares of AXT's common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders.

We have never paid or declared any cash dividends on our common stock and do not anticipate paying cash dividends in the foreseeable future. Dividends accrue on our outstanding Series A preferred stock at the rate of \$0.20 per annum per share of Series A preferred stock.

**Item 6. Selected Consolidated Financial Data**

The following selected consolidated financial data are derived from and should be read in conjunction with our consolidated financial statements and related notes set forth in Item 8 below, and in our previously filed reports on Form 10-K. See also Item 7 "Management's Discussion and Analysis of Financial Condition

and Results of Operations” for further information relating to items reflecting our results of operations and financial condition.

	Years Ended December 31,				
	2003	2002	2001	2000	1999
	(In thousands, except per share data)				
<b>Income Statement Data:</b>					
Revenue	\$ 34,713	\$ 44,865	\$ 108,800	\$ 113,374	\$ 56,732
Cost of revenue	32,478	53,758	67,494	61,361	33,446
Gross profit (loss)	2,235	(8,893)	41,306	52,013	23,286
Operating expenses:					
Selling, general, and administrative	10,475	13,860	17,208	13,619	6,194
Research and development	1,337	2,339	3,876	4,307	2,007
Restructuring costs	—	14,632	—	—	—
Acquisition costs	—	—	—	—	2,810
Total operating expenses	11,812	30,831	21,084	17,926	11,011
Income (loss) from operations	(9,577)	(39,724)	20,222	34,087	12,275
Interest expense	466	437	831	2,357	1,431
Other (income) and expense, net	1,050	12,703	13,379	(28,463)	(1,308)
Income (loss) from continuing operations before provision for income taxes	(11,093)	(52,864)	6,012	60,193	12,152
Provision for income taxes	—	2,119	2,164	22,874	5,685
Income (loss) from continuing operations	(11,093)	(54,983)	3,848	37,319	6,467
Discontinued operations:					
Loss from discontinued operations	(6,163)	(34,625)	(13,818)	(22,264)	(7,092)
Loss on disposal	(9,475)	—	—	(1,341)	—
Benefit for income taxes	—	(8,427)	(4,974)	(7,896)	(1,305)
Loss from discontinued operations	(15,638)	(26,198)	(8,844)	(15,709)	(5,787)
Extraordinary item, net of tax benefits	—	—	—	—	(508)
Net income (loss)	\$(26,731)	\$ (81,181)	\$ (4,996)	\$ 21,610	\$ 172
Basic income (loss) per share:					
Income (loss) from continuing operations	\$ (0.49)	\$ (2.46)	\$ 0.17	\$ 1.90	\$ 0.35
Loss from discontinued operations	(0.69)	(1.17)	(0.40)	(0.80)	(0.31)
Extraordinary item	—	—	—	—	(0.03)
Net income (loss)	(1.18)	(3.63)	(0.23)	1.10	0.01
Diluted income (loss) per share:					
Income (loss) from continuing operations	\$ (0.49)	\$ (2.46)	\$ 0.17	\$ 1.77	\$ 0.33
Loss from discontinued operations	(0.69)	(1.17)	(0.39)	(0.75)	(0.29)
Extraordinary item	—	—	—	—	(0.03)
Net income (loss)	(1.18)	(3.63)	(0.23)	1.03	0.01
Shares used in per share calculations:					
Basic	22,781	22,433	22,278	19,677	18,655
Diluted	22,781	22,433	22,879	21,059	19,771

	December 31,				
	2003	2002	2001	2000	1999
(In thousands)					
<b>Balance Sheet Data:</b>					
Cash and cash equivalents	\$ 24,339	\$ 13,797	\$ 37,538	\$ 68,585	\$ 6,062
Short-term investments	14,669	8,205	25,673	30,852	—
Working capital	57,335	65,375	125,295	140,387	40,462
Restricted deposits	9,302	11,150	—	—	—
Long-term investments	—	3,657	6,552	—	—
Total assets	107,023	145,667	243,359	250,220	115,762
Long-term capital lease, net of current portion	—	4,847	10,002	7,278	6,853
Long-term debt, net of current portion	8,842	13,289	14,342	15,123	15,254
Stockholders' equity	82,298	105,657	186,322	185,347	62,459

All periods have been restated to reflect the accounting for discontinued operations. As a result, the discontinued opto-electronics and consumer products divisions have been eliminated from continuing operations in the income statements.

## **Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with "Selected Consolidated Financial Data" and our consolidated financial statements and related notes included elsewhere in this Form 10-K. In addition to historical information, the discussion in this Form 10-K contains forward-looking statements that involve risks and uncertainties that could cause our actual results to differ materially from those projected. The statements contained in the Report on Form 10-K that are not purely historical are forward looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, including, without limitation, statements regarding our expectations, beliefs, intentions or strategies regarding the future. All forward-looking statements included in this Report on Form 10-K are based on information available to us on the date hereof, and we assume no obligation to update any such forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors, which may cause our actual results to differ materially from those implied by the forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "expects," "plans," "anticipates," "believes," "estimates," "predicts," "potential," or "continues" or the negative of these terms or other comparable terminology. Factors that might cause or contribute to such differences include, but are not limited to, those set forth under "Risks Related to Our Business" and elsewhere in this Form 10-K.

### **Overview**

We were founded in 1986 to commercialize and enhance our proprietary vertical gradient freeze (VGF) technique for producing high-performance compound semiconductor substrates. Upon the discontinuance of our opto-electronics division, and the sale of substantially all of the assets of this business in 2003, we now have one operating segment: our substrate division. We made our first substrate sales in 1990 and our substrate division currently sells gallium arsenide (GaAs) and indium phosphide (InP) substrates to manufacturers of semiconductor devices for use in applications such as fiber optic and wireless telecommunications, light emitting diodes (LEDs) and lasers. We also sell raw materials including gallium and germanium through our participation in majority- and minority-owned joint ventures. We have the capability to manufacture germanium substrates for use in satellite solar cells but withdrew from this business during 2000 so that we could more profitably use our then constrained capacity. We are now trying to re-qualify our germanium substrates with the few existing satellite solar cell system manufacturers.

Our total revenue from continuing operations was \$34.7 million for 2003, \$44.9 million for 2002 and \$108.8 million for 2001. In 2003 we incurred a loss from operations of \$9.6 million compared to a loss of \$39.7 million for 2002 and income of \$20.2 million for 2001.

On June 24, 2003, we announced the discontinuation of our opto-electronics division, which we established as part of our acquisition of Lyte Optronics, Inc. in May 1999. Accordingly, the results of operations of the opto-electronics division have been segregated from continuing operations and are reported separately as discontinued operations in our consolidated statements of operations for all periods presented (see Note 2 to our consolidated financial statements for details regarding the accounting for discontinued operations). The discontinued opto-electronics division manufactured blue, cyan, and green high-brightness light emitting diodes (HBLEDs) for the illumination markets, including full-color displays, wireless handset backlighting and traffic signals, and also manufactured vertical cavity surface emitting lasers (VCSELs) and laser diodes for fiber optic communications and storage area networks.

On September 27, 2003 we completed a sale of substantially all of the assets of our opto-electronics business to Lumei Optoelectronics, Corp. and Dalian Luming Science and Technology Group, Co., Ltd. for the Chinese Renminbi (RMB) equivalent of \$9.6 million. Sale proceeds of \$1.0 million will be held in escrow for up to one year and will not be recorded until all claims, if any, are settled. If unclaimed, up to \$250,000 of the sale proceeds will be held in escrow for a second year and will not be recorded until all claims, if any, are settled. We retain a building located in Monterey Park, CA, that we expect to sell in 2004. This asset is classified as Held for Sale on our consolidated balance sheet at December 31, 2003.

## [Table of Contents](#)

Our continuing business, primarily sales of our substrate products, is dependant on the semiconductor industry, which is highly cyclical and has historically experienced downturns both as a result of economic changes and of overcapacity. We experienced a growth period that lasted from our initiation of sales in 1990 through the first half of 2001. In the second half of 2001, we experienced a \$44.9 million, or 58.5% decrease in revenue compared to the first half as a result of the rapid decline in the mobile and fiber optic telecommunications markets. Together with other industry participants, we experienced lower revenues, slower bookings, push outs and cancellation of orders. As such, we recorded losses in the third and fourth quarters of 2001.

During the first half of 2002 our revenues grew due to improvements in the wireless market. In the second half of 2002 our revenue fell, however, because the substrate industry was still facing excess capacity that caused prices to decline, and because we experienced a loss of market share after two competitors developed technologies similar to ours. In addition, certain customers selected competitors' products in order to diversify their supply sources and due to the belief that the competitors' substrates offered better surface qualities. Full year 2002 revenue declined \$63.9 million, or 58.8% compared to 2001. We recorded losses in each quarter of 2002 and incurred impairment charges against fixed assets and inventory due to the decline in demand and prices. In reaction to the economic downturn, we initiated an aggressive effort to reduce substrate manufacturing costs. This included moving much of our substrate manufacturing operations to China, reducing capacity in our Fremont, CA facility and developing and investing in key low-cost raw material sources.

In 2003, we believe that the wireless communications and HBLED markets grew, but our revenue did not increase until the fourth quarter of 2003 due to continued reductions in prices and the time required to improve our substrate surface quality and regain some lost customers. Revenue for 2003 fell by \$10.2 million, or 22.6% compared with 2002. We recorded losses in each quarter of 2003. During the year we continued to shift more of our manufacturing operations to China and reduced our costs incurred in the United States.

We cannot predict the level of future industry demand or of our ability to regain lost market share, but they have impacted our ability to sell our products and operate profitably. If demand for our products remains depressed for an extended period, our business will be harmed as a result. Our business performance will be most influenced by market demand for compound semi-conductor substrates, our ability to offer products that equal or exceed the quality provided by competitors, product pricing, our ability to shift more of our manufacturing production to China, and our ability to create and defend our intellectual property while not infringing on the intellectual property of others.

### **Critical Accounting Policies and Estimates**

We have prepared our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America. As such, we have had to make estimates, assumptions and judgments that affect the amounts reported on our financial statements. These estimates, assumptions and judgments about future events and their effects on our results cannot be determined with certainty, and are made based upon our historical experience and on other assumptions that are believed to be reasonable under the circumstances. These estimates may change as new events occur or additional information is obtained, and we may periodically be faced with uncertainties, the outcomes of which are not within our control and may not be known for a prolonged period of time. The discussion and analysis of our results of operations and financial condition are based upon these consolidated financial statements. We have identified the policies below as critical to our business operations and understanding of our financial condition and results of operations. A critical accounting policy is one that is both material to the presentation of our financial statements and requires us to make difficult, subjective or complex judgments that could have a material effect on our financial condition and results of operations. They may require us to make assumptions about matters that are highly uncertain at the time of the estimate, and different estimates that we could have used, or changes in the estimate that are reasonably likely to occur, may have a material impact on our financial condition or results of operations.

We believe that the following are our critical accounting policies:

### ***Revenue Recognition***

We recognize revenue upon shipment of products to our customers provided that we have received a signed purchase order, the price is fixed or determinable, title has transferred, collection of resulting receivables is probable, product returns are reasonably estimable, there are no customer acceptance requirements and there are no remaining obligations. We assess the probability of collection based on a number of factors including past history with the customer and credit worthiness. We provide for future returns based on historical experience, current economic trends and changes in customer demand at the time revenue is recognized. Except for sales in Japan and some sales in Taiwan, which in both cases are denominated in Japanese yen, we denominate and collect our international sales in U.S. dollars. We do not provide for warranty related exposure as such exposure has historically been immaterial.

### ***Allowance for Doubtful Accounts***

We periodically review the likelihood of collecting our accounts receivable balances and provide an allowance for doubtful accounts receivable primarily based upon the age of these accounts. We provide a 100% allowance for U.S. receivables in excess of 90 days and for foreign receivables in excess of 120 days. At December 31, 2003 our accounts receivable balance was \$6.3 million net of an allowance for doubtful accounts of \$4.3 million.

### ***Inventory***

Inventories are stated at the lower of cost or market. Cost is determined using the standard cost method. Finished goods and work-in-process inventories include material, labor and manufacturing overhead costs. We routinely evaluate the levels of our inventory in light of current market conditions in order to identify excess and obsolete inventory and we provide a valuation allowance for certain inventories based upon the age and quality of the product. Competitive delivery times are frequently less than the time required for us to manufacture a product, requiring us to build some work-in-process inventories in anticipation of orders. If orders are not obtained for the product built, the products will ultimately be deemed obsolete and we will establish a reserve for their value. We also review our inventory to ensure costs can be realized upon ultimate sale to our customers. If we determine that the value of any items in ending inventory exceeds the sales value less any related selling costs, a reserve is established for the difference.

### ***Impairment of Long-Lived Assets***

We evaluate the recoverability of property, equipment, and intangible assets in accordance with Statement of Financial Accounting Standards No. 144, or SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." When events and circumstances indicate that long-lived assets may be impaired, we compare the carrying value of the long-lived assets to the projection of future undiscounted cash flows attributable to such assets and in the event that the carrying value exceeds the future undiscounted cash flows, we record an impairment charge against income equal to the excess of the carrying value over the asset's fair value.

### ***Investments***

We determine the appropriate classification of investments at the time of purchase. Available-for-sale investments are carried at their fair value based on quoted market prices as of the balance sheet date. The amortized cost of securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization is included in "other (income) and expense, net." Realized gains or losses are determined on the specific identification method and are reflected in "other (income) and expense, net." Net unrealized gains or losses are recorded directly in stockholders' equity. Those unrealized losses that are deemed to be other than temporary are reflected in "interest and other income, net." We also maintain minority investments in private companies which are accounted for under the cost basis. These investments are reviewed for other

[Table of Contents](#)

than temporary declines in value on a quarterly basis. Reasons for other than temporary declines in value include whether the related company would have insufficient cash flow to operate for the next twelve months, significant changes in the operating performance and changes in market conditions.

***Income Taxes***

We account for deferred income taxes using the liability method, under which the expected future tax consequences of timing differences between the book and tax basis of assets and liabilities are recognized as deferred tax assets and liabilities. Valuation allowances are established when necessary to reduce net deferred tax assets when management estimates, based on available objective evidence, that it is more likely than not that the future income tax benefit represented by the net deferred tax asset will not be realized.

**Voluntary Stock Option Exchange Program**

On May 27, 2003, we announced a voluntary stock option exchange program for our employees. Under the program, our option holders, excluding our executive officers and independent directors, had the opportunity to cancel outstanding options with an exercise price in excess of \$2.10 per share in exchange for new options to be granted at a future date that was at least six months and one day after the cancellation date. The number of shares of common stock subject to the new options was equal to 75% of the number subject to the exchanged options. Under the exchange program, options to purchase an aggregate of 738,027 shares of our common stock, representing approximately 48% of the options that were eligible to be tendered in the Offer were tendered and cancelled. New options will vest at the same rate as the exchanged options and have an exercise price equal to the fair market value of our common stock at the new grant date, which was \$3.11 per share. On December 31, 2003, we granted options to purchase an aggregate of 522,754 shares of our common stock in exchange for such tendered options.

**Results of Operations**

The following table sets forth certain operating data as a percentage of total revenues for the periods indicated.

	Years Ended December 31,		
	2003	2002	2001
Revenue	100.0%	100.0%	100.0%
Cost of revenue	93.6%	119.8%	62.0%
Gross profit (loss)	6.4%	(19.8)%	38.0%
Operating expenses:			
Selling, general, and administrative	30.2%	30.9%	15.8%
Research and development	3.9%	5.2%	3.6%
Restructuring costs	0.0%	32.6%	0.0%
Total operating expenses	34.1%	68.7%	19.4%
Income (loss) from operations	(27.7)%	(88.5)%	18.6%
Interest expense	1.3%	1.0%	0.8%
Other (income) and expense, net	3.0%	28.3%	12.3%
Income (loss) from continuing operations before provision for income taxes	(32.0)%	(117.8)%	5.5%
Provision for income taxes	0.0%	4.7%	2.0%
Income (loss) from continuing operations	(32.0)%	(122.5)%	3.5%
Discontinued operations:			
Loss from discontinued operations	(17.8)%	(77.1)%	(12.7)%
Loss on disposal	(27.3)%	0.0%	0.0%
Benefit for income taxes	0.0%	18.8%	4.6%
Loss from discontinued operations	(45.1)%	(58.3)%	(8.1)%
Net Loss	(77.1)%	(180.8)%	(4.6)%

**Year Ended December 31, 2003 Compared to Year Ended December 31, 2002**

*Revenue from continuing operations.* Revenue from continuing operations decreased \$10.2 million, or 22.6%, to \$34.7 million in 2003 compared to \$44.9 million in 2002. Total GaAs substrate revenue decreased \$4.6 million, or 13.9%, to \$28.3 million in 2003 compared to \$32.9 million in 2002. Sales of 5 inch and 6 inch diameter GaAs substrates, which are used exclusively to manufacture electronic devices, decreased \$3.4 million, or 38.9%, to \$5.4 million in 2003 compared to \$8.8 million in 2002. InP substrate revenue decreased \$4.4 million, or 68.0%, to \$2.1 million in 2003 compared to \$6.5 million in 2002. InP substrates are used almost exclusively for telecommunications applications. The decrease in GaAs and InP substrate revenue is due to decreased volume and lower average sales prices as a result of the slowdown in our target markets including telecommunications, high speed electronic devices, and short wavelength lasers, and the introduction of VGF-like substrates from our competitors that caused some customers to purchase substrates from our competitors rather than from us.

International revenue increased to 65.9% of total revenue from continuing operations in 2003 compared to 43.9% in 2002. The increase was primarily due to a greater share of our GaAs substrates being used in opto-electronics applications and the majority of our customers for these applications being in Asia.

*Gross margin.* Gross margin increased to 6.4% of revenue in 2003 compared to negative 19.8% in 2002. The increase was primarily due to reduced costs associated with moving most of our production to China. In addition, we incurred a charge of \$9.7 million in 2002 related to the write-down of certain inventory that we concluded was obsolete.

## [Table of Contents](#)

*Selling, general and administrative expenses.* Selling, general and administrative expenses decreased \$3.4 million, or 24.4%, to \$10.5 million in 2003 compared to \$13.9 million in 2002. As a percentage of total revenue, selling, general and administrative expenses were 30.2% in 2003 compared to 30.9% in 2002. The decrease in selling, general and administrative expenses is the result of our efforts to adjust costs in line with our current business and of our ability to shift some of these activities to China where our costs are lower.

*Research and development expenses.* Research and development expenses decreased \$1.0 million or 42.8%, to \$1.3 million in 2003 compared to \$2.3 million in 2002. As a percentage of total revenue, research and development expenses were 3.9% in 2003 compared to 5.2% in 2002. Although we reduced research and development expenses in 2003 as part of our effort to reduce costs, we believe that continued investment in product development is critical to attaining our strategic objectives of maintaining and increasing our technology leadership, and as a result, we expect research and development expenses to remain at current levels in future periods. Research and development efforts during 2003 were focused primarily on improving the yield and surface quality of our GaAs substrates.

*Interest expense.* Interest expense increased \$29,000, or 6.6%, to \$466,000 in 2003 compared to \$437,000 in 2002. By the end of 2003, we had repaid \$10.1 million in equipment lease and loan debt which will reduce future interest payments.

*Other income and expense, net.* Other expense was \$1.1 million in 2003 compared to \$12.7 million in 2002. The amount in 2003 includes charges of \$2.1 million related to the write-down of investments we hold in two privately held U.S. companies. The amount in 2002 includes non-cash charges of \$10.8 million related to the write-down to market value of our investment in Finisar Corporation common stock and \$3.1 million to write-down a building held for sale to net realizable value.

*Provision for income taxes.* Due to our continuing operating losses and uncertainty regarding future profitability, we recorded a full valuation allowance against our net deferred tax assets of \$31.2 million in 2002. During 2003, we continued to record a full valuation allowance against our net deferred tax assets and as a result, our effective tax rate decreased to 0.0% for 2003.

*Loss from discontinued operations.* Loss from our discontinued opto-electronics division for the year ended December 31, 2003 was \$15.6 million, which included a loss on disposal of \$9.5 million and the operating loss from our discontinued opto-electronics division of \$6.1 million.

### **Year Ended December 31, 2002 Compared to Year Ended December 31, 2001**

*Revenue from continuing operations.* Revenue from continuing operations decreased \$63.9 million, or 58.8%, to \$44.9 million in 2002 compared to \$108.8 million in 2001. Total GaAs substrate revenue decreased \$42.5 million, or 56.4%, to \$32.9 million in 2002 compared to \$75.4 million in 2001. Sales of 5" and 6" diameter GaAs substrates decreased \$12.8 million, or 59.2%, to \$8.8 million in 2002 compared to \$21.6 million in 2001. InP substrate revenue decreased \$21.7 million, or 77.0%, to \$6.5 million in 2002 compared to \$28.2 million in 2001. The decrease in GaAs and InP substrate revenue was due to decreased volume and sales prices as a result of the slowdown in our markets including telecommunications, high speed electronic devices, and short wavelength lasers.

International revenue decreased to 43.9% of total revenue in 2002 compared to 47.5% of total revenue in 2001.

*Gross margin.* Gross margin decreased to negative 19.8% of revenue in 2002 compared to positive 38.0% in 2001. The decrease was primarily due to lower unit sales and average sales prices of GaAs and InP substrates spread over a relatively fixed manufacturing overhead base and a \$9.7 million charge to write-down excess inventory. As a result, we initiated manufacturing cost reductions in order to align our costs with lower expected sales volumes and prices. We shifted much of our substrate manufacturing to China and reduced capacity in our Fremont, California facility.

*Selling, general and administrative expenses.* Selling, general and administrative expenses decreased \$3.3 million, or 19.5%, to \$13.8 million in 2002 compared to \$17.2 million in 2001. As a percentage of total

## [Table of Contents](#)

revenue, selling, general and administrative expenses were 30.9% in 2002 compared to 15.8% in 2001. In order to align our cost structure with the rapid decline in revenues, we initiated and aggressively pursued cost reductions in this area, which led to the decrease in 2002.

*Research and development expenses.* Research and development expenses decreased \$1.5 million or 39.7%, to \$2.3 million in 2002 compared to \$3.9 million in 2001. As a percentage of total revenue, research and development expenses were 5.2% in 2002 compared to 3.6% in 2001. Research and development efforts during 2002 were focused primarily on improving the yield and surface quality of our GaAs substrates.

*Interest expense.* Interest expense decreased \$394,000, or 47.4%, to \$437,000 in 2002 compared to \$831,000 in 2001. The decrease was primarily due to the repayment of certain long-term real estate notes and capital equipment leases.

*Other income and expense.* Other expense was \$12.7 million in 2002 compared to \$13.4 million in 2001. The amount in 2002 includes non-cash charges of \$10.8 million related to the write-down to market value of our investment in Finisar Corporation common stock and \$3.1 million to write-down a building held for sale to net realizable value. The 2001 balance includes a non-cash charge of \$15.6 million to write-down to market value our investment in Finisar common stock.

*Provision for income taxes.* Due to our continuing operating losses during 2002 and uncertainty regarding future profitability, we recorded a full valuation allowance against our net deferred tax assets of \$31.2 million in 2002. As a result, our effective tax rate decreased to 7.2% in 2002. Our effective tax rate in 2001 was 36%.

*Loss from discontinued operations.* Loss from our discontinued opto-electronics division for the year ended December 31, 2002 was \$26.2 million net of income tax benefit of \$8.4 million.

## **Liquidity and Capital Resources**

We consider cash and cash equivalents, and short-term investments as liquid and available for use. Short-term investments are comprised of government bonds and high-grade commercial debt instruments. Also included in short-term investments is our common stock investment in Finisar Corporation.

Cash and cash equivalents, short-term investments and long-term investments, excluding \$3.7 million and \$1.1 million for our investment in Finisar common stock at December 31, 2003 and 2002 respectively, increased \$8.9 million to \$44.6 million at December 31, 2003 compared to \$35.7 million at December 31, 2002.

Cash and cash equivalents increased \$10.5 million to \$24.3 million at December 31, 2003 compared to \$13.8 million at December 31, 2002.

Net cash provided by operating activities of \$6.3 million for the year ended December 31, 2003 was comprised primarily of our net loss adjusted for non-cash items of \$18.0 million, consisting primarily of the loss on disposal of our opto-electronics division of \$9.5 million, depreciation of \$5.8 million, and by a \$15.0 million net change in assets and liabilities. The net change in assets and liabilities resulted primarily from a decrease in inventory, prepaid expenses and income tax receivable, offset by decreases in accounts payable and accrued liabilities.

Accounts receivable decreased \$898,000, or 12.5%, to \$6.3 million at December 31, 2003 compared to \$7.2 million at December 31, 2002. The change reflects lower sales volume, collections of \$32.5 million and a decrease in our allowance for doubtful accounts of \$2.4 million due to the collection of previously written-down receivables. It also included a \$666,000 write-down of accounts receivable from our discontinued opto-electronics division, which is included in "loss on disposal" in our consolidated statement of operations for the year ended December 31, 2003.

Inventories decreased \$13.5 million, or 35.9% to \$24.1 million at December 31, 2003 compared to \$37.6 million at December 31, 2002. The decrease in inventory included a \$2 million write-down of inventory from our discontinued opto-electronics division, which is included in "loss on disposal" in our consolidated

[Table of Contents](#)

statement of operations for the year ended December 31, 2003. The Company adopted a strategy of using inventory to conserve cash. During 2004 we do not expect to maintain the same rate of net inventory decrease as we experienced in 2003.

Net cash provided by investing activities of \$13.7 million for the year ended December 31, 2003 includes proceeds from the sale of property and equipment, and high grade investment securities totaling \$27.7 million, offset by purchases of property and equipment of \$2.2 million primarily used to transfer production capacity to China for the substrate division, and purchases of high grade investment securities with maturities of less than two years totaling \$5.9 million. It also includes an increase in restricted cash of \$5.8 million to collateralize a letter of credit with a bank that supports our long-term debt and workers' compensation insurance policy.

We do not have any plans to initiate any major new capital spending projects through 2004. We are currently completing certain projects at our China facilities and are continuously constructing minor improvements to our existing production facilities in China and California. We expect to invest approximately \$5.0 million in capital projects in 2004. We believe that our existing and planned facilities and equipment are sufficient to fulfill current and expected future orders.

Net cash used in financing activities of \$9.6 million consisted of proceeds of \$480,000 from the exercise of options by our employees, offset by payments of \$10.1 million to reduce long-term borrowings and capital leases.

Our main Fremont, California manufacturing facility is financed by long-term borrowings, which were refinanced by taxable variable rate revenue bonds in 1998. These bonds mature in 2023 and bear interest at a variable rate that was 1.35% at December 31, 2003. The bonds are traded in the public market. Repayment of principal and interest under the bonds is supported by a letter of credit from our bank and is paid on a quarterly basis. We have the option to redeem the bonds in whole or in part during their term. At December 31, 2003, \$8.5 million was outstanding under these bonds.

At December 31, 2003 the credit facility maintained by us with a bank included a letter of credit supporting repayment of our industrial bonds with an outstanding amount of \$8.5 million. The Company has pledged and placed cash and certain investment securities with an affiliate of the bank as additional collateral for this facility. We have also pledged cash for a credit facility for our workers compensation insurance. As a result, \$9.3 million of our cash and long-term investments are restricted.

We currently hold a note payable secured by certain equipment in China totaling \$3.3 million at December 31, 2003 (see Note 4 to our consolidated financial statements). The balance on this note will be due in December 2004.

We believe that we have adequate cash and investments to meet the Company's short- and long-term needs. If our sales decrease, however, our ability to generate cash from operations will be adversely affected which could adversely affect our future liquidity, require us to use more cash at a more rapid rate than expected, and require us to seek additional capital. There can be no assurance that such additional capital will be available or, if available it will be at terms acceptable to the Company. Cash from operations could be affected by various risks and uncertainties, including, but not limited to those set forth below under "Risks Related to Our Business."

[Table of Contents](#)

Outstanding contractual obligations as of December 31, 2003 are summarized below (in thousands):

	Debt	Operating Leases	Total
2004	\$ 3,694	\$ 1,231	\$ 4,925
2005	514	1,115	1,629
2006	459	836	1,295
2007	462	616	1,078
2008	466	617	1,083
Thereafter	6,941	3,236	10,177
	<u>\$12,536</u>	<u>\$ 7,651</u>	<u>\$20,187</u>

We lease certain office space, manufacturing facilities and property under long-term operating leases expiring at various dates through March 2013. Total rent expense under these operating leases was approximately \$1.2 million for the year ended December 31, 2003, \$947,000 in 2002 and \$779,000 in 2001.

## Risks Related to Our Business

***The semiconductor industry is cyclical and has experienced a downturn which has adversely impacted our operating results.***

Our continuing business depends in significant part upon manufacturers of electronic and opto-electronic semiconductor devices, as well as the current and anticipated market demand for such devices and products using such devices. As a supplier to the semiconductor industry, we are subject to the business cycles that characterize the industry. The timing, length and volatility of these cycles are difficult to predict. The semiconductor industry has historically been cyclical because of sudden changes in demand for semiconductors and capacity requirements, including capacity utilizing the latest technology. The rate of changes in demand, including end demand, is high, and the effect of these changes upon us occurs quickly, exacerbating the volatility of these cycles. These changes have affected the timing and amounts of customers' capital equipment purchases and investments in new technology. These industry cycles create pressure on our net sales, gross margin and net income.

The industry has previously experienced periods of oversupply that result in significantly reduced demand for semiconductor devices and components, including our products, both as a result of general economic changes and overcapacity. When these periods occur, our operating results and financial condition are adversely affected, and create pressure on our revenue, gross margins and net income. Inventory buildups in telecommunications products and slower than expected sales of computer equipment resulted in overcapacity and led to reduced sales by our customers, and therefore reduced purchases of our products. During periods of weak demand such as those experienced over the past years, customers typically reduce purchases, delay delivery of products and/or cancel orders of component parts such as our products. Increased price competition has resulted, causing pressure on our net sales, gross margin and net income. We experienced cancellations, price reductions, delays and push outs of orders, which have resulted in reduced revenues. If the economic downturn were to continue, or occur again in the future, further order cancellations, reductions in order size or delays in orders will materially adversely affect our business and results of operations. Actions to reduce our costs, such as those we have recently taken, may be insufficient to align our structure with prevailing business conditions. We may be required to undertake additional cost-cutting measures, and may be unable to invest in marketing, research and development and engineering at the levels we believe are necessary to maintain our competitive position. Our failure to make these investments could seriously harm our business.

During periods of increasing demand for semiconductor devices, we must have sufficient manufacturing capacity and inventory to meet customer demand, and must be able to attract, hire, train and retain qualified employees to meet demand. It appears that the semiconductor industry is in the early stages of an upturn and increasing demand. However, we cannot predict the sustainability of a recovery, if any, and the industry's rate of growth in this recovery, if it occurs. If we are unable to effectively manage our resources and production

## [Table of Contents](#)

capacity during an industry upturn, there could be a material adverse effect on our business, financial condition and results of operations.

***If the economy recovers and we are again in a period of high demand for our products, we may be unable to expand our manufacturing capacity quickly enough to meet increased demand, we may make decisions to expand capacity that are not profitable, and we may be unable to lower our costs or increase revenue.***

It appears that the industry may be in an upturn, which may cause demand to increase rapidly as it has in prior years after other cyclical downturns in the economy and the industries in which we operate. If this happens, in order to meet increased demand and maintain our market share, we may need to increase production, which could require us to build new facilities, expand and modify our existing facilities, purchase additional manufacturing equipment, and add qualified staff. If we are not at that time able to expand our manufacturing capacity, we will be unable to increase production, which may adversely impact our ability to meet increased production demand while reducing unit costs, margins and improving our operating results.

We are currently constructing and modifying facilities in California and China. Our construction activities subject us to a number of risks, including:

- unforeseen environmental or engineering problems;
- unavailability or late delivery of production equipment;
- delays in completing new facilities;
- delays in bringing production equipment on-line;
- work stoppages or delays;
- inability to recruit and train qualified staff; and
- unanticipated cost increases and restrictions imposed by requirements of local, state or federal regulatory agencies in the United States and China.

If any of these risks occurs, construction may be costlier than anticipated and completion could be delayed, which could hurt our ability to expand capacity and increase our sales. In addition, if we experience delays in expanding our manufacturing capacity, we may not be able to timely meet customer requirements, and we could lose future sales. We are also completing selective investments in equipment and facilities as part of our previously planned capacity expansion. To offset the additional fixed operating expenses, we must increase our revenue by increasing production and improving yields. If demand for our products does not grow, if prices decline significantly, or if our yields do not improve as anticipated, we may be unable to offset these costs against increased revenue, which would adversely impact our operating results.

***Unpredictable fluctuations in our operating results could disappoint analysts or our investors, which could cause our stock price to decline.***

We have not over the past year been able to sustain growth, and may not be able to return to historic growth levels in the current economic environment. Our net loss in 2002 was the largest in our history and our losses continued during 2003. We believe we will endure losses for at least part of 2004. We have and may continue to experience significant fluctuations in our revenue and earnings. Our quarterly and annual revenue and operating results have varied significantly in the past and may vary significantly in the future due to a number of factors, including:

- decline in general economic conditions or downturns in the industry in which we compete;
- fluctuations in demand for our products;
- expansion of our manufacturing capacity;
- expansion of our operations in China;

## [Table of Contents](#)

- limited availability and increased cost of raw materials;
- the volume and timing of orders from our customers, and cancellations, push outs and delays of customer orders;
- fluctuation of our manufacturing yields;
- decreases in the prices of our competitors' products;
- costs incurred in connection with any future acquisitions of businesses or technologies;
- increases in our expenses, including expenses for research and development; and
- our ability to develop, manufacture and deliver high quality products in a timely and cost-effective manner.

Due to these factors, we believe that period-to-period comparisons of our operating results may not be meaningful indicators of our future performance. Our operating results have over the past year at times been below the expectations of securities analysts or investors. If this occurs again in future periods, the price of our common stock could decline or fluctuate.

A substantial percentage of our operating expenses are fixed in the short term and we may be unable to adjust spending to compensate for an unexpected shortfall in revenues. As a result, any delay in generating revenue could cause our operating results to be below the expectations of market analysts or investors, which could also cause our stock price to fall.

### ***Our results of operations may suffer if we do not effectively manage our inventory.***

We must manage our inventory of component parts, work-in-process, and finished goods effectively to meet changing customer requirements, while keeping inventory costs down and improving gross margins. Some of our products and supplies have in the past and may in the future become obsolete while in inventory due to changing customer specifications, or become excess inventory due to decreased demand for our products and an inability to sell the inventory within a foreseeable period. Furthermore, if current costs of production increase or sales prices drop below the standard prices at which we value inventory, we may need to take a charge for a reduction in inventory values. We have in the past had to take inventory valuation and impairment charges. If we are not successfully able to manage our inventory, we may need to write off unsaleable, obsolete or excess inventory, which could adversely affect our results of operations. On October 1, 2003, we implemented a new inventory control system that may experience unexpected difficulties.

### ***The disposal of our opto-electronics business may fail to result in the benefits we anticipate.***

We may not obtain the benefits we expect as a result of discontinuation of our opto-electronics business, such as greater strategic focus on our core businesses. We may be required to return to the buyer some or all of the \$1 million of the sale proceeds which will be held in escrow should the buyer successfully claim that we breached one of the representations or warranties made to it. Our building in Monterey Park may not be sold for the \$1 million at which we are carrying it on our balance sheet. We may incur additional costs associated with the discontinued operations which could materially reduce our short term earnings.

### ***Much of our cash resources are denominated in Chinese currency and are subject to exchange control restrictions.***

Much of our cash resources are denominated in Chinese Renminbi and held in accounts in China and, under some circumstances, may not be easily exchanged for US dollars. The value of our Chinese cash holdings are also subject to changes in the exchange rate between Chinese Renminbi and US dollars. If our US dollar commitments were to exceed the cash we have available in the United States, we may be unable to access cash held in China to satisfy these commitments.

***A reoccurrence of Severe Acute Respiratory Syndrome (SARS) or the outbreak of a different contagious disease may adversely impact our manufacturing operations and some of our key suppliers and customers.***

The majority of our substrate manufacturing activities are conducted in China. In addition, we source key raw materials, including gallium, from our joint ventures and other suppliers in China. The 2003 SARS outbreak was most notable in China and a small number of cases have been reported to date in 2004. One employee at our LED production facility in China contracted SARS in late April 2003 prompting us to close the facility for ten days. There was no significant impact to our ability to fill customer orders. If there were to be another outbreak of SARS or a different contagious disease and if our employees contracted the disease, we may be required to temporarily close our manufacturing operations. Similarly, if one of our key suppliers is required to close for an extended period, we may not have enough raw material inventory to continue manufacturing operations. In addition, while we possess management skills among our China staff that enable us to maintain our manufacturing operations with minimal on-site supervision from our US-based staff, our business could also be harmed if travel to or from Asia and the United States is restricted or inadvisable, as it was during parts of 2003. None of our substrate competitors is as dependent on manufacturing facilities in China as we are. If our manufacturing operations were closed for a significant period, we could lose revenue and market share during that period which would depress our financial performance and could be difficult to recapture. Finally, if one of our key customers is required to close for an extended period, we may not be able to ship product to them, our revenue would decline and our financial performance would suffer.

***The impact of changes in global economic conditions on our customers may cause us to fail to meet expectations, which would negatively impact the price of our stock.***

Our operating results can vary significantly based upon the impact of changes in global economic conditions on our customers. More specifically, the macro-economic environment that we faced in 2003 was more uncertain than in some prior periods, lasted longer than expected and has materially and adversely affected us and our operating results and may continue to do so. The revenue growth and profitability of our business depends on the overall demand for our substrates, and we are particularly dependant on the market conditions for the wireless, solid-state illumination, fiber optics and telecommunications industries. Because our sales are primarily to major corporate customers whose businesses fluctuate with general economic and business conditions, a softening of demand for products that use our substrates, caused by a weakening economy may result in further or prolonged decreased revenues. Customers may find themselves facing excess inventory from earlier purchases, and may defer or reconsider purchasing products due to the downturn in their business and in the general economy.

***If we do not successfully develop new products to respond to rapidly changing customer requirements, our ability to generate sales and obtain new customers may suffer.***

Our success depends on our ability to offer new products and product features that incorporate leading technology and respond to technological advances. In addition, our new products must meet customer needs and compete effectively on quality, price and performance. The life cycles of our products are difficult to predict because the markets for our products are characterized by rapid technological change, changing customer needs and evolving industry standards. If our competitors introduce products employing new technologies or performance characteristics, our existing products could become obsolete and unmarketable. During the past year, we have seen our competitors selling more substrates manufactured using a crystal growth technology similar to ours, which has eroded our technological differentiation. If we fail to offer new products, we may not generate sufficient revenue to offset our development costs and other expenses or meet our customers' requirements. Other companies, including Triquent, are actively developing substrate materials that could be used to manufacture devices that could provide the same high-performance, low-power capabilities as GaAs- and InP-based devices at competitive prices. If these substrate materials or VGF derived products are successfully developed and semiconductor device manufacturers adopt them, demand for our GaAs substrates could decline and our revenue could suffer.

The development of new products can be a highly complex process, and we may experience delays in developing and introducing new products. Any significant delays could cause us to fail to timely introduce and gain market acceptance of new products. Further, the costs involved in researching, developing and engineering new products could be greater than anticipated.

***Our operating results depend in large part on further customer acceptance of our existing substrate products manufactured in China.***

To shift more of our substrate manufacturing operations to China successfully, we will need our customers to qualify products manufactured in China. If we are unable to achieve qualifications for these products, our China facility will be underutilized, our investments in China will not be recouped and we will be unable to lower our costs by moving to China. We may lose sales of our products to competitors who are not manufacturing in China, or whose operations in China have already been qualified by customers. All of these events could reduce our revenue but increase our cost structure.

Furthermore, some customers have reduced their orders from us until our surface quality is as good and consistent as that offered by competitors. As a result, some customers are now allocating their requirements for VGF grown substrates across more competitors and we believe that we have lost revenue and market share as a result of these customer decisions, which we may be unable to recover. If we are unable to retain our market share, our revenue and performance will decline.

***Intense competition in the markets for our products could prevent us from increasing revenue and sustaining profitability.***

The markets for our products are intensely competitive. We face competition for our substrate products from other manufacturers of substrates, such as Freiburger, Hitachi Cable, Japan Energy and Sumitomo Electric and from semiconductor device manufacturers that produce substrates for their own use, and from companies, such as Triquent, that are actively developing alternative materials to GaAs and some semiconductor devices are being marketed using these materials. We believe that at least two of our competitors are shipping high volumes of GaAs substrates manufactured using a technique similar to our VGF technique. Other competitors may develop and begin using similar technology. If we are unable to compete effectively, our revenue may not increase and we may be unable to be profitable. We face many competitors that have a number of significant advantages over us, including:

- greater experience in the business;
- more manufacturing experience;
- extensive intellectual property;
- broader name recognition; and
- significantly greater financial, technical and marketing resources.

Our competitors could develop new or enhanced products that are more effective than our products are.

The level and intensity of competition has increased over the past year and we expect competition to continue to increase in the future. Competitive pressures caused by the current economic conditions have resulted in reductions in the prices of our products, and continued or increased competition could reduce our market share, require us to further reduce the prices of our products, affect our ability to recover costs or result in reduced gross margins.

***Defects in our products could diminish demand for our products.***

Our products are complex and may contain defects. We have experienced quality control problems with some of our products over the past two years, which caused customers to return products to us, reduce orders for our products, or both. If we continue to experience quality control problems, or experience these or other problems in new products, customers may cancel or reduce orders or purchase products from our competitors

[Table of Contents](#)

and sales of our products could decline. Defects in our products could cause us to incur higher manufacturing costs and suffer product returns and additional service expenses, all of which could adversely impact our operating results.

If new products developed by us contain defects when released, our customers may be dissatisfied and we may suffer negative publicity or customer claims against us, lose sales or experience delays in market acceptance of our new products.

***If we have low product yields, the shipment of our products may be delayed and our operating results may be adversely impacted.***

Our products are manufactured using complex technologies, and the number of usable substrates we can produce can fluctuate as a result of many factors, including:

- impurities in the materials used;
- contamination of the manufacturing environment;
- substrate breakage;
- equipment failure, power outages or variations in the manufacturing process; and
- performance of personnel involved in the manufacturing process.

If our yields decrease, our revenue could decline because many of our manufacturing costs are fixed, or would increase. We have experienced product shipment delays and difficulties in achieving acceptable yields on both new and older products, and delays and poor yields have adversely affected our operating results. We may experience similar problems in the future and we cannot predict when they may occur or their severity. In particular, many of our manufacturing processes are new and are still being refined, which can result in lower yields.

***We derive a significant portion of our revenue from international sales, and our ability to sustain and increase our international sales involves significant risks.***

Our revenue growth depends in part on the expansion of our international sales and operations. International sales represented 65.9% of our total revenue for the year ended December 31, 2003 and 43.9% for the year ended December 31, 2002. We expect that sales to customers outside the U.S. will continue to represent a significant portion of our revenue, particularly sales to customers in Asia.

Currently, an increasing percentage of our sales are to customers headquartered in Asia. Certain manufacturing facilities and suppliers are also located outside the U.S. Managing our global operations presents challenges, including periodic regional economic downturns, trade balance issues, varying business conditions and demands, political instability, variations in enforcement of intellectual property and contract rights in different jurisdictions, differences in the ability to develop relationships with suppliers and other local businesses, changes in U.S. and international laws and regulations including U.S. export restrictions, fluctuations in interest and currency exchange rates, the ability to provide sufficient levels of technical support in different locations, cultural differences, shipping delays and terrorist acts or acts of war, among other risks. Many of these challenges are present in China, which represents a large potential market for semiconductor equipment and where AXT anticipates significant opportunity for growth. Global uncertainties with respect to: (i) economic growth rates in various countries; (ii) sustainability of demand for electronics products; (iii) capital spending by semiconductor manufacturers; (iv) price weakness for certain semiconductor devices; and (v) political instability in regions where we have operations may also affect our business, financial condition and results of operations.

Our dependence on international sales involves a number of risks, including:

- changes in tariffs, import or export restrictions and other trade barriers;
- unexpected changes in regulatory requirements;

## [Table of Contents](#)

- longer periods to collect accounts receivable;
- changes in export license requirements;
- political and economic instability;
- unexpected changes in diplomatic and trade relationships; and
- foreign exchange rate fluctuations.

Our sales are denominated in U.S. dollars, except for sales to our Japanese and some Taiwanese customers, which are denominated in Japanese yen. Thus, increases in the value of the U.S. dollar could increase the price of our products in non-U.S. markets and make our products more expensive than competitors' products in these markets. Also, denominating some sales in Japanese yen subjects us to fluctuations in the exchange rates between the U.S. dollar and the Japanese yen. The functional currencies of our Japanese and Chinese subsidiaries are the local currencies. We incur transaction gains or losses resulting from consolidation of expenses incurred in local currencies for these subsidiaries, as well as in translation of the assets and liabilities of these assets at each balance sheet date. If we do not effectively manage the risks associated with international sales, our revenue, cash flows and financial condition could be adversely affected.

### ***Demand for our products may decrease if our customers experience difficulty manufacturing, marketing or selling their products.***

Our products are used as components in our customers' products. Accordingly, demand for our products is subject to factors affecting the ability of our customers to successfully introduce and market their products, including:

- the competition our customers face in their particular industries;
- the technical, manufacturing, sales and marketing and management capabilities of our customers;
- the financial and other resources of our customers; and
- the inability of our customers to sell their products if they infringe third party intellectual property rights.

If demand for the end user applications for which our products are used decreases, or our customers are unable to develop, market and sell their products, demand for our products will decrease.

### ***The financial condition of our customers may affect their ability to pay amounts owed to us.***

Many of our customers are facing business downturns that have reduced their cash balances and their prospects. We frequently allow our customers to pay for products we ship to them within 30 to 90 days after delivery. Subsequent to our shipping a product, some customers have been unable to make payments as due, reducing our cash balances and causing us to incur charges to allow for a possibility that some accounts might not be paid. At least three customers that owed us a significant amount have filed for bankruptcy protection and we are unlikely to receive a substantial portion or any of the amounts owed to us as part of a bankruptcy settlement. Other customers may also be forced to file for bankruptcy. If our customers do not pay their accounts when due, we will be required to incur charges that would reduce our earnings.

### ***We purchase critical raw materials and parts for our equipment from single or limited sources, and could lose sales if these sources fail to fill our needs.***

We depend on a limited number of suppliers for certain raw materials, components and equipment used in manufacturing our products, including key materials such as quartz tubing, polishing solutions, and paralytic boron nitride. We generally purchase these materials through standard purchase orders and not pursuant to long-term supply contracts and no supplier guarantees supply of raw materials or equipment to us. If we lose any of our key suppliers, our manufacturing efforts could be significantly hampered and we could be prevented from timely producing and delivering products to our customers. We have experienced delays

obtaining critical raw materials and spare parts, including gallium, due to shortages of these materials. We may experience delays due to shortages of materials and may be unable to obtain an adequate supply of materials. These shortages and delays could result in higher materials costs and cause us to delay or reduce production of our products. If we have to delay or reduce production, we could fail to meet customer delivery schedules and our revenue and operating results could suffer.

**If we fail to comply with environmental and safety regulations, we may be subject to significant fines or cessation of our operations; in addition, we could be subject to suits for personal injuries caused by exposure to hazardous materials.**

We are subject to federal, state and local environmental and safety laws and regulations in all of our operating locations. These laws, rules and regulations govern the use, storage, discharge and disposal of hazardous chemicals during manufacturing, research and development, and sales demonstrations. If we fail to comply with applicable regulations, we could be subject to substantial liability for clean-up efforts, personal injury and fines or suspension or cessation of our operations. In March 2001, we settled a claim made by the California Occupational Safety and Health Administration, or Cal-OSHA, in an investigation primarily regarding impermissible levels of potentially hazardous materials in certain areas of our manufacturing facility in Fremont, California for \$200,415. Although we have put in place engineering, administrative and personnel protective equipment programs to address these issues, our ability to expand or continue to operate our present locations could be restricted or we could be required to acquire costly remediation equipment or incur other significant expenses. Existing or future changes in laws or regulations may require us to incur significant expenditures or liabilities, or may restrict our operations. In addition, our employees could be exposed to chemicals or other hazardous materials at our facilities and we may be subject to lawsuits seeking damages for wrongful death or personal injuries allegedly caused by exposure to chemicals or hazardous materials at our facilities.

If litigation is brought against us, litigation is inherently uncertain and while we would expect to defend ourselves vigorously, it is possible that our business, financial condition, results of operations or cash flows, could be affected in any particular period by such litigation if brought against us.

***The loss of one or more of our key substrate customers would significantly hurt our operating results.***

A small number of substrate customers have historically accounted for a substantial portion of our total revenue. Five customers accounted for 28.9% of our total revenue for the year ended December 31, 2003 and 31.4% for the year ended December 31, 2002. One customer accounted for 6.8% of our revenue for the year ended December 31, 2003. We expect that a significant portion of our future revenue will continue to be derived from a limited number of substrate customers. Our customers are not obligated to purchase a specified quantity of our products or to provide us with binding forecasts of product purchases. In addition, our customers may reduce, delay or cancel orders at any time without any significant penalty, and during the past year, we have experienced slower bookings, significant push outs and cancellation of orders. In addition, due to the difficult economic environment, several of our previously large customers have stopped operations entirely. If we lose a major customer or if a customer cancels, reduces or delays orders, our revenue would decline. In addition, customers that have accounted for significant revenue in the past may not continue to generate revenue for us in any future period. Any delay in scheduled shipments of our products could cause net sales to fall below our expectations and the expectations of market analysts or investors, causing our stock price to decline.

***Our substrate products have a long qualification cycle that makes it difficult to plan our expenses and forecast our results.***

Customers typically place orders with us for our substrate products three months to a year or more after our initial contact with them. The sale of our products may be subject to delays due to our customers' lengthy internal budgeting, approval and evaluation processes. During this time, we may incur substantial expenses and expend sales, marketing and management efforts while the customers evaluate our products. These expenditures may not result in sales of our products. If we do not achieve anticipated sales in a period as

expected, we may experience an unplanned shortfall in our revenue. As a result, we may not be able to cover expenses, causing our operating results to vary. In addition, if a customer decides not to incorporate our products into its initial design, we may not have another opportunity to sell products to this customer for many months or even years. In the current competitive and economic climate, the average sales cycle for our products has lengthened even further and is expected to continue to make it difficult to accurately forecast our future sales. We anticipate that sales of any future substrate products will also have lengthy sales cycles and will, therefore, be subject to risks substantially similar to those inherent in the lengthy sales cycle of our current substrate products.

***If we are unable to protect our intellectual property, we may lose valuable assets or incur costly litigation.***

We rely on a combination of patents, copyrights, trademark and trade secret laws, non-disclosure agreements and other intellectual property protection methods to protect our proprietary technology. However, we believe that, due to the rapid pace of technological innovation in the markets for our products, our ability to establish and maintain a position of technology leadership also depends on the skills of our development personnel.

Despite our efforts to protect our intellectual property, a third party could develop products or processes similar to ours. Our means of protecting our proprietary rights may not be adequate and our competitors may independently develop similar technology, duplicate our products or design around our patents. We believe that at least two of our competitors have begun to ship GaAs substrates produced using a process similar to our VGF technique. Our competitors may also develop and patent improvements to the VGF technology upon which we rely, and thus may limit any exclusivity we enjoy by virtue of our patents or trade secrets.

It is possible that pending or future United States or foreign patent applications made by us will not be approved, that our issued patents will not protect our intellectual property, or that third parties will challenge the ownership rights or the validity of our patents. In addition, the laws of some foreign countries may not protect our proprietary rights to as great an extent as do the laws of the United States and it may be more difficult to monitor the use of our intellectual property. Our competitors may be able to legitimately ascertain non-patented proprietary technology embedded in our systems. If this occurs, we may not be able to prevent the development of technology substantially similar to ours.

We may have to resort to costly litigation to enforce our intellectual property rights, to protect our trade secrets or know-how or to determine their scope, validity or enforceability. Enforcing or defending our proprietary technology is expensive, could cause us to divert resources and may not prove successful. Our protective measures may prove inadequate to protect our proprietary rights, and if we fail to enforce or protect our rights, we could lose valuable assets.

***Intellectual property infringement claims may be costly to resolve and could divert management attention.***

Other companies may hold or obtain patents on inventions or may otherwise claim proprietary rights to technology necessary to our business. The markets in which we compete are comprised of competitors who in some cases hold substantial patent portfolios covering aspects of products that could be similar to ours. We could become subject to claims that we are infringing patent, trademark, copyright or other proprietary rights of others, and have recently been sued by a substrate competitor concerning alleged patent infringement. Litigation to determine the validity of alleged claims could be time-consuming and result in significant expense to us and divert the efforts of our technical and management personnel, whether or not the litigation is ultimately determined in our favor. If a lawsuit is decided against us, we could be subject to significant liabilities, requiring us to seek costly licenses or preventing us from manufacturing and selling our products. We may not be able to obtain required licensing agreements on terms acceptable to us or at all.

***As our business matures, we may need to upgrade our systems, or incur additional costs related to regulatory compliance.***

In the past, periods of rapid growth and expansion has strained our management and other resources. The expansion of our manufacturing capacity and the shift of manufacturing operations to China placed and continue to place a significant strain on our operations and management resources. We recently upgraded our inventory control systems and may implement additional systems relating to consolidation of our financial results. If we fail to manage these changes effectively, our operations may be disrupted.

To manage our business effectively, we may need to implement additional and improved management information systems, further develop our operating, administrative, financial and accounting systems and controls, add experienced senior level managers, and maintain close coordination among our executive, engineering, accounting, marketing, sales and operations organizations.

If necessary, we will spend substantial sums to support our future growth and shift to China and to comply with the reporting and attestation requirements of the Sarbanes-Oxley Act of 2002. We may incur additional unexpected costs. Our systems, procedures or controls may not be adequate to support our operations, and we may be unable to expand quickly enough to exploit potential market opportunities.

***If we fail to manage periodic contractions, we may utilize our cash balances and our existing cash and cash equivalent balances could decline.***

We anticipate that our existing cash resources will fund any anticipated operating losses, purchases of capital equipment and provide adequate working capital for the next twelve months. However, our liquidity is affected by many factors including, among others, the extent to which we pursue additional capital expenditures, the level of our production, and other factors related to the uncertainties of the industry and global economies. If we fail to manage our contractions successfully we may draw down our cash reserves, which would adversely affect our operating results and financial condition, reduce our value and may impinge our ability to raise debt and equity funding in the future, at a time when we may be required to raise additional cash. Accordingly, there can be no assurance that events in the future will not require us to seek additional capital, or, if so required, that such capital will be available on terms acceptable to us, if at all. As part of our effort to reduce costs, we may lose key staff, production resources, and technology that we will need to grow when end markets recover. These events could reduce our ability to grow profitably as markets recover.

***As a result of the difficult economic conditions, we have implemented restructuring and workforce reductions, which may adversely affect the morale and performance of our personnel and our ability to hire new personnel.***

In connection with our efforts to streamline operations, reduce costs and bring staffing and structure in line with demand for our products, we implemented a corporate restructuring beginning in 2001 and reduced our workforce, shifted production activities to China, reduced capital expenditures, and discontinued our opto-electronics business. In addition, our stock price is volatile, which can affect the value of stock options issued to our employees. Our restructuring may yield unanticipated consequences, such as attrition beyond our planned reduction in workforce and loss of employee morale and decreased performance. As a result of these factors, our remaining personnel may seek employment with larger, more established companies or companies that they perceive as having less volatile stock prices. Continuity of personnel can be very important factors in the sales and production of our products and completion of our research and development efforts.

***Any future acquisitions may disrupt our business, dilute stockholder value or distract management attention.***

As part of our strategy, we may consider acquisitions of, or significant investments in, businesses that offer products, services and technologies complementary to ours. Acquisitions entail numerous risks, including:

- we may have difficulty assimilating the operations, products and personnel of the acquired businesses;
- our ongoing business may be disrupted;
- we may incur unanticipated costs;
- our management may be unable to manage the financial and strategic position of acquired or developed products, services and technologies;
- we may be unable to maintain uniform standards, controls, procedures, and policies; and
- our relationships with employees and customers may be impaired as a result of any integration.

For example, we incurred substantial costs in connection with our acquisition of Lyte Optronics in May 1999, including the assumption of approximately \$10.0 million of debt, which was subsequently repaid, resulting in a decline of cash available. We also incurred consistent operating losses for the business following the acquisition, and have discontinued all operations and sold the related assets acquired in our acquisition of Lyte Optronics during 2003.

To the extent that we issue shares of our stock or other rights to purchase stock in connection with any future acquisitions, dilution to our existing stockholders will result and our earnings per share may suffer. Any future acquisitions may not generate additional revenue or provide any benefit to our business.

***If any of our facilities is damaged by actions such as fire, explosion, or natural disaster, we may not be able to manufacture our products.***

The ongoing operation of our manufacturing and production facilities in California and China is critical to our ability to meet demand for our products. If we are not able to use all or a significant portion of our facilities for prolonged periods for any reason, we will not be able to manufacture products for our customers. For example, a natural disaster, fire or explosion caused by our use of combustible chemicals and high temperatures during our manufacturing processes would render some or all of our facilities inoperable for an indefinite period of time. Actions outside of our control, such as earthquakes, could also damage our facilities, rendering them inoperable. Some of our manufacturing and research and development is currently performed at our Fremont, California facilities, which are located near an active seismic fault line. If we are unable to operate our facilities and manufacture our products, we will lose customers and revenue and our business will be harmed.

***If we lose key personnel or are unable to hire additional qualified personnel as necessary, we may not be able to successfully manage our business or achieve our objectives.***

Our success depends upon the continued service of Morris S. Young, Ph.D., our president, chairman of the board and chief executive officer, as well as other key management and technical personnel. We do not have long-term employment contracts with, or key person life insurance on, any of our key personnel.

We believe our future success will also depend in large part upon our ability to attract and retain highly skilled managerial, engineering, sales and marketing, finance and manufacturing personnel. The competition for these employees is intense and we cannot assure you that we will be successful in attracting and retaining new personnel. The loss of the services of any of our key personnel, the inability to attract or retain qualified personnel in the future or delays in hiring required personnel, particularly engineers, could make it difficult for us to manage our business and meet key objectives, including the timely introduction of new products.

***Changes in China's political, social and economic environment may affect our financial performance.***

Our financial performance may be affected by changes in China's political, social and economic environment. The role of the Chinese central and local governments in the Chinese economy is significant. Chinese policies toward economic liberalization, and laws and policies affecting technology companies, foreign investment, currency exchange rates and other matters could change, resulting in greater restrictions on our ability to do business and operate our manufacturing facilities in China. Any imposition of surcharges or any increase in Chinese tax rates could hurt our operating results. The Chinese government could revoke, terminate or suspend our license for national security and similar reasons without compensation to us. If the government of China were to take any of these actions, we would be prevented from conducting all or part of our business. Any failure on our part to comply with governmental regulations could result in the loss of our ability to manufacture our products in China.

China has from time to time experienced instances of civil unrest and hostilities. Confrontations have occurred between the military and civilians. Events of this nature could influence the Chinese economy, result in nationalization of foreign-owned operations such as ours, and could negatively affect our ability to operate our facilities in China.

***The effect of terrorist threats and actions on the general economy could decrease our revenues.***

The United States continues to be on alert for terrorist activity. The potential near- and long-term impact terrorist activities may have in regards to our suppliers, customers and markets for our products and the U.S. economy are uncertain. There may be embargos of ports or products, or destruction of shipments or our facilities, or attacks that affect our personnel. There may be other potential adverse effects on our operating results due to a significant event that we cannot foresee.

***Our stock price has been and may continue to be volatile.***

Our stock price has fluctuated significantly since we began trading on the Nasdaq National Market. For the year ended December 31, 2003, the high and low closing sales prices of our common stock were \$3.42 and \$0.67, respectively. A number of factors could cause the price of our common stock to continue to fluctuate substantially, including:

- actual or anticipated fluctuations in our quarterly or annual operating results;
- changes in expectations about our future financial performance or changes in financial estimates of securities analysts;
- announcements of technological innovations by us or our competitors;
- new product introduction by us or our competitors;
- large customer orders or order cancellations; and
- the operating and stock price performance of comparable companies.

In addition, the stock market in general has experienced extreme volatility that often has been unrelated to the operating performance of particular companies. These broad market and industry fluctuations may adversely affect the trading price of our common stock, regardless of our actual operating performance.

***We have adopted certain anti-takeover measures that may make it more difficult for a third party to acquire us.***

Our board of directors has the authority to issue up to 2,000,000 shares of preferred stock and to determine the price, rights, preferences and privileges of those shares without any further vote or action by the stockholders. The rights of the holders of common stock will be subject to, and may be adversely affected by, the rights of the holders of any preferred stock that may be issued in the future. The issuance of shares of preferred stock, while potentially providing desirable flexibility in connection with possible acquisitions and for

## [Table of Contents](#)

other corporate purposes, could have the effect of making it more difficult for a third party to acquire a majority of our outstanding voting stock. We have no present intention to issue shares of preferred stock.

Further, on April 24, 2001, our board of directors adopted a preferred stock purchase rights plan intended to guard against certain takeover tactics. The adoption of this plan was not in response to any proposal to acquire us, and the board is not aware of any such effort. The existence of this plan could also have the effect of making it more difficult for a third party to acquire a majority of our outstanding voting stock. In addition, certain provisions of our certificate of incorporation may have the effect of delaying or preventing a change of control, which could adversely affect the market price of our common stock.

In addition, provisions in our amended and restated certificate of incorporation and bylaws may have the effect of delaying or preventing a merger, acquisition or change of control of us, or changes in our management, including:

- the division of our board of directors into three separate classes, each with three year terms;
- the right of our board to elect a director to fill a space created by a board vacancy or the expansion of the board;
- the ability of our board to alter our bylaws;
- the ability of our board to authorize the issuance of up to 2,000,000 shares of blank check preferred stock; and
- the requirement that only our board or the holders of at least 10% of our outstanding shares may call a special meeting of our stockholders.

Furthermore, because we are incorporated in Delaware, we are subject to the provisions of Section 203 of the Delaware General Corporation Law. These provisions prohibit large stockholders, in particular those owning 15% or more of the outstanding voting stock, from consummating a merger or combination with a corporation unless:

- 66 2/3% of the shares of voting stock not owned by these large stockholders approve the merger or combination, or
- the board of directors approves the merger or combination or the transaction which resulted in the large stockholder owning 15% or more of our outstanding voting stock.

***Legislative actions, higher insurance costs and potential new accounting pronouncements are likely to cause our general and administrative expenses to increase and impact our future financial position and results of operations.***

In order to comply with the newly adopted Sarbanes-Oxley Act of 2002, as well as proposed changes to listing standards by Nasdaq, and proposed accounting changes by the Securities and Exchange Commission, we may be required to increase our internal controls, hire additional personnel and additional outside legal, accounting and advisory services, all of which will cause our general and administrative costs to increase. Insurers may increase premiums as a result of the high claims rates they incurred over the past year, and our premiums for our various insurance policies, including our directors' and officers' insurance policies, increased during 2003. Proposed changes in the accounting rules, including legislative and other proposals to account for employee stock options as a compensation expense among others, could materially increase the expense that we report under generally accepted accounting principles and adversely affect our operating results.

***We need to continue to improve or implement our systems, procedures and controls and may not receive favorable attestation of our internal control systems by our independent auditors.***

The new requirements adopted by the Securities and Exchange Commission in response to the passage of the Sarbanes-Oxley Act of 2002 will require annual review and evaluation of our internal control systems, and attestation of these systems by our independent accountants. We are currently reviewing our internal control procedures and considering further documentation of such procedures that may be necessary. However, the

guidelines for the evaluation and attestation of internal control systems have not yet been finalized. Furthermore, once the guidelines are finalized, the evaluation and attestation processes will be new and untested. Therefore, we can give no assurances that our systems will satisfy the new requirements of the Securities and Exchange Commission or that we will receive a favorable review and attestation by our independent auditors.

#### **Item 7A. Quantitative and Qualitative Disclosures About Market Risk**

##### **Foreign Currency Risk**

We use short-term forward exchange contracts for hedging purposes to reduce the effects of adverse foreign exchange rate movements. We have purchased foreign exchange contracts to hedge against certain trade accounts receivable denominated in Japanese yen. The change in the fair value of the forward contracts is recognized as part of the related foreign currency transactions as they occur. As of December 31, 2003, we had no outstanding commitments with respect to foreign exchange contracts.

##### **Interest Rate Risk**

Cash and cash equivalents earning interest and certain variable rate debt instruments are subject to interest rate fluctuations. The following table sets forth the probable impact of a 10% change in interest rates (in thousands):

<u>Instrument</u>	<u>Balance December 31, 2003</u>	<u>Current Interest Rate</u>	<u>Current Interest Income/ (Expense)</u>	<u>Proforma 10% Interest Rate Decline Income/(Expense)</u>	<u>Proforma 10% Interest Rate Increase Income/(Expense)</u>
Cash and cash equivalents	\$ 24,339	1.80%	\$ 438	\$ 394	\$ 482
Bonds (see Note 5)	8,450	1.35%	(114)	(103)	(125)
			<u>\$ 324</u>	<u>\$ 291</u>	<u>\$ 357</u>

##### **Equity Risk**

We also maintain minority investments in private and publicly traded companies. These investments are reviewed for other than temporary declines in value on a quarterly basis. Reasons for other than temporary declines in value include whether the related company would have insufficient cash flow to operate for the next twelve months, significant changes in the operating performance and changes in market conditions. In 2003, we recorded \$2.0 million in charges to other expense to write down our investment in two private US companies. As of December 31, 2003, the minority investments we continue to hold totaled \$4.3 million.

#### **Item 8. Consolidated Financial Statements and Supplementary Data**

##### **Selected Quarterly Results of Operations**

The following table sets forth unaudited quarterly results in dollars and percentages for the eight quarters ended December 31, 2003. We believe that all necessary adjustments, consisting only of normal recurring

[Table of Contents](#)

adjustments, have been included in the amounts stated below to present fairly such quarterly information. The operating results for any quarter are not necessarily indicative of results for any subsequent period.

	Quarters ended							
	Dec. 31, 2003	Sept. 30, 2003	June 30, 2003	Mar. 31, 2003	Dec. 31, 2002	Sept. 30, 2002	June 30, 2002	Mar. 31, 2002
Revenue	\$ 9,129	\$ 8,529	\$ 8,519	\$ 8,536	\$ 8,503	\$ 11,726	\$ 12,897	\$ 11,739
Cost of revenue	8,342	8,029	7,844	8,263	18,253	12,885	11,087	11,533
Gross profit (loss)	787	500	675	273	(9,750)	(1,159)	1,810	206
Operating expenses:								
Selling, general and administrative	2,502	2,654	2,819	2,500	2,752	3,495	3,441	4,172
Research and development	289	301	368	379	597	486	513	743
Restructuring costs	—	—	—	—	—	542	14,090	—
Total operating expenses	2,791	2,955	3,187	2,879	3,349	4,523	18,044	4,915
Loss from operations	(2,004)	(2,455)	(2,512)	(2,606)	(13,099)	(5,682)	(16,234)	(4,709)
Interest expense	96	145	108	117	75	105	122	135
Other (income) and expense, net	15	(3)	1,269	(231)	4,520	(308)	9,208	(717)
Loss from continuing operations before provision for income taxes	(2,115)	(2,597)	(3,889)	(2,492)	(17,694)	(5,479)	(25,564)	(4,127)
Provision (benefit) for income taxes	—	—	—	—	(2,314)	10,673	(4,590)	(1,650)
Loss from continuing operations	(2,115)	(2,597)	(3,889)	(2,492)	(15,380)	(16,152)	(20,974)	(2,477)
Discontinued operations:								
Loss from discontinued operations	—	(1,591)	(2,747)	(1,825)	(2,476)	(19,533)	(10,813)	(1,803)
Loss on disposal	—	1,625	(11,100)	—	—	—	—	—
Benefit for income taxes	—	—	—	—	(324)	(7,012)	(369)	(722)
Loss from discontinued operations	—	34	(13,847)	(1,825)	(2,152)	(12,521)	(10,444)	(1,081)
Net loss	(2,115)	(2,563)	(17,736)	(4,317)	(17,532)	(28,673)	(31,418)	(3,558)

[Table of Contents](#)

	Quarters ended							
	Dec. 31, 2003	Sept. 30, 2003	June 30, 2003	Mar. 31, 2003	Dec. 31, 2002	Sept. 30, 2002	June 30, 2002	Mar. 31, 2002
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of revenue	91.4%	94.1%	92.1%	96.8%	214.7%	109.9%	86.0%	98.2%
Gross profit (loss)	8.6%	5.9%	7.9%	3.2%	(114.7)%	(9.9)%	14.0%	1.8%
Operating expenses:								
Selling, general and administrative	27.4%	31.1%	33.1%	29.3%	32.4%	29.8%	26.7%	35.5%
Research and development	3.2%	3.5%	4.3%	4.4%	7.0%	4.1%	4.0%	6.3%
Restructuring costs	0.0%	0.0%	0.0%	0.0%	0.0%	4.6%	109.3%	0.0%
Total operating expenses	30.6%	34.6%	37.4%	33.7%	39.4%	38.6%	139.9%	41.9%
Loss from operations	(22.0)%	(28.7)%	(29.5)%	(30.5)%	(154.1)%	(48.5)%	(125.9)%	(40.1)%
Interest expense	1.1%	1.7%	1.3%	1.4%	0.9%	0.9%	0.9%	1.2%
Other (income) and expense, net	0.2%	0.0%	14.9%	(2.7)%	53.2%	(2.6)%	71.4%	(6.1)%
Loss from continuing operations before provision for income taxes	(23.3)%	(30.4)%	(45.7)%	(29.2)%	(208.1)%	(46.7)%	(198.2)%	(35.2)%
Provision (benefit) for income taxes	0.0%	0.0%	0.0%	0.0%	(27.2)%	91.0%	(35.6)%	(14.1)%
Loss from continuing operations	(23.3)%	(30.4)%	(45.7)%	(29.2)%	(180.9)%	(137.7)%	(162.6)%	(21.1)%
Discontinued operations:								
Loss from discontinued operations	0.0%	(18.7)%	(32.2)%	(21.4)%	(29.1)%	(166.6)%	(83.8)%	(15.4)%
Loss on disposal	0.0%	19.1%	(130.3)%	0.0%	0.0%	0.0%	0.0%	0.0%
Benefit for income taxes	0.0%	0.0%	0.0%	0.0%	(3.8)%	(59.8)%	(2.9)%	(6.2)%
Loss from discontinued operations	0.0%	0.4%	(162.5)%	(21.4)%	(25.3)%	(106.8)%	(81.0)%	(9.2)%
Net loss	(23.3)%	(30.0)%	(208.2)%	(50.6)%	(206.2)%	(244.5)%	(243.6)%	(30.3)%

Other Consolidated Financial Statements and Supplementary Data required by this item are set forth at the pages indicated at Item 14(a).

**Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosures**

None.

**Item 9A. Controls and Procedures**

(a) Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a-14(c) promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of the end of the period covered by this report. Based on their evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

(b) As required by Rule 13a-15(d), our management, including our principal executive officer and principal finance officer, also conducted an evaluation of our internal control over financial reporting to determine whether any changes occurred during the quarter covered by this report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, there has been no such change during the quarter covered by this report. It should be noted that any system of controls, however well designed and operated, can provide only reasonable and not absolute assurance that the objectives of the system will be met.

### PART III

The SEC allows us to include information required in this report by referring to other documents or reports we have already or will soon be filing. This is called "Incorporation by Reference." We intend to file our definitive proxy statement pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this report, and certain information therein is incorporated in this report by reference.

#### **Item 10. *Directors and Executive Officers of the Registrant.***

The information required by this Item is incorporated herein by reference to information set forth in our definitive proxy statement to be filed in connection with our annual meeting of stockholders to be held on May 18, 2004, under the section entitled "Proposal No. 1-Election of Directors."

Information concerning our executive officers is incorporated herein by reference to information set forth in our definitive proxy statement to be filed in connection with our annual meeting of stockholders to be held on May 18, 2004, under the section entitled "Executive Compensation and Other Matters."

The information required by this Item with respect to compliance with Section 16(a) of the Securities Exchange Act of 1934 is incorporated herein by reference to information set forth in the definitive Proxy statement to be filed in connection with our annual meeting of stockholders to be held on May 18, 2004, under the heading "Section 16(a) Beneficial Ownership Reporting Compliance."

We have revised our Insider Trading Policy to allow our directors, officers and other employees covered under the policy to establish, under limited circumstances contemplated by Rule 10b5-1 under the Securities Exchange Act of 1934, written programs that permit automatic trading of our stock or trading of our stock by an independent person (such as an investment bank) who is not aware of material inside information at the time of the trade. On February 28, 2003 Morris S. Young, our Chief Executive Officer, activated a trading plan under Rule 10b5-1. Some other of our directors or officers may establish such programs in future periods.

We adopted a code of Business Conduct and Ethics that applies to our principal executive officer, principal financial officer, and other employees. A copy of this Code of Business Conduct and Ethics is filed as an exhibit to this Form 10-K.

#### **Item 11. *Executive Compensation.***

The information required by this Item is incorporated herein by reference to information set forth in our definitive Proxy statement to be filed in connection with our annual meeting of stockholders to be held on May 18, 2004, under the section entitled "Executive Compensation and Other Matters."

#### **Item 12. *Security Ownership of Certain Beneficial Owners and Management, and Equity Compensation Plan Information.***

The information required by this Item is incorporated herein by reference to information set forth in our definitive Proxy statement to be filed in connection with our annual meeting of stockholders to be held on May 18, 2004, under the section entitled "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information."

#### **Item 13. *Certain Relationships and Related Transactions***

Since January 2002, there has not been, nor is there currently proposed, any transaction or series of similar transactions to which we were or are to be a party in which the amount involved exceeds \$60,000, and in which any director, executive officer or holder of more than 5% of any class of our voting securities or members of that person's immediate family had or will have a direct or indirect material interest other than the transactions described below.

We entered into an operating lease in July 2001 for warehouse space in Fremont, CA with 4160 Business Center, LLC, a real estate holding company, in which Davis Zhang, the president of our substrate division, is the sole shareholder. Lease payments to 4160 Business Center, LLC were approximately \$121,000 for the

[Table of Contents](#)

three months ended March 31, 2003. In April of 2003, Mr. Zhang sold this warehouse to a party unrelated to the Company. We began leasing this warehouse from the new owner on the date of sale. Mr. Zhang will continue to hold a \$3.7 million note on the property through April 2005.

**Item 14. *Principal Accountant Fees and Services***

The information required by this Item is incorporated herein by reference to information set forth in our definitive Proxy statement to be filed in connection with our annual meeting of stockholders to be held on May 18, 2004, under the section entitled "Principal Accountant Fees and Services."

**PART IV**

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

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

(1) Financial Statements:

**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

Report of Independent Auditors	40
Consolidated Balance Sheets	41
Consolidated Statements of Operations	42
Consolidated Statements of Stockholders' Equity	43
Consolidated Statements of Cash Flows	44
Notes to Consolidated Financial Statements	45-63

(2) Financial Statement Schedules

All schedules have been omitted because the required information is not present or not present in amounts sufficient to require submission of the schedules or because the information required is included in the Consolidated Financial Statements or Notes thereto.

(3) Exhibits

See Index to Exhibits on page 65 hereof. The exhibits listed in the accompanying Index to Exhibits are filed as part of, or incorporated by reference into, this report on Form 10-K.

(b) Reports on Form 8-K

We filed or furnished the following quarterly reports on Form 8-K during the quarter ended December 31, 2003:

(1) We furnished the report on Form 8-K on October 22, 2003 reporting our financial results for the quarter ended September 30, 2003.

## REPORT OF INDEPENDENT AUDITORS

To the Board of Directors and Stockholders of AXT, Inc.:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, of stockholders equity and cash flows present fairly, in all material respects, the financial position of AXT, Inc. and its subsidiaries at December 31, 2003 and 2002, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2003 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States of America, which 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, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/S/ PRICEWATERHOUSECOOPERS LLP

San Jose, California

March 5, 2004

**AXT, INC.**  
**CONSOLIDATED BALANCE SHEETS**

	December 31,	
	2003	2002
(In thousands, except per share data)		
<b>ASSETS</b>		
Current assets		
Cash and cash equivalents	\$ 24,339	\$ 13,797
Short-term investments	14,669	8,205
Accounts receivable, net	6,297	7,195
Inventories	24,083	37,598
Prepaid expenses and other current assets	1,575	4,002
Income tax receivable	—	8,783
Assets held for sale	1,000	5,957
	<u>71,963</u>	<u>85,537</u>
Total current assets	71,963	85,537
Property, plant and equipment	21,795	39,982
Restricted deposits	9,302	11,150
Long-term investments	—	3,657
Other assets	3,963	5,341
	<u>3,963</u>	<u>5,341</u>
Total assets	<u>\$107,023</u>	<u>\$145,667</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities		
Accounts payable	\$ 2,638	\$ 4,228
Accrued liabilities	8,296	11,407
Current portion of long-term debt	3,694	965
Current portion of capital lease obligation	—	3,562
	<u>14,628</u>	<u>20,162</u>
Total current liabilities	14,628	20,162
Long-term debt, net of current portion	8,842	13,289
Long-term capital lease, net of current portion	—	4,847
Other long-term liabilities	1,255	1,712
	<u>1,255</u>	<u>1,712</u>
Total liabilities	<u>24,725</u>	<u>40,010</u>
Commitments and Contingencies (Note 14)		
Stockholders' equity:		
Preferred stock, \$.001 par value; 2,000 shares authorized; 883 shares issued and outstanding	3,532	3,532
Common stock, \$.001 par value; 70,000 shares authorized; 22,957 and 22,495 shares issued and outstanding	155,178	154,485
Accumulated deficit	(78,928)	(52,197)
Other comprehensive income (loss)	2,516	(163)
	<u>82,298</u>	<u>105,657</u>
Total stockholders' equity	82,298	105,657
Total liabilities and stockholders' equity	<u>\$107,023</u>	<u>\$145,667</u>

The accompanying notes are an integral part of these consolidated financial statements.

**AXT, INC.**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

	Years Ended December 31,		
	2003	2002	2001
	(In thousands, except per share data)		
Revenue	\$ 34,713	\$ 44,865	\$ 108,800
Cost of revenue	32,478	53,758	67,494
Gross profit (loss)	2,235	(8,893)	41,306
Operating expenses:			
Selling, general and administrative	10,475	13,860	17,208
Research and development	1,337	2,339	3,876
Restructuring costs	—	14,632	—
Total operating expenses	11,812	30,831	21,084
Income (loss) from operations	(9,577)	(39,724)	20,222
Interest expense	466	437	831
Other (income) and expense, net	1,050	12,703	13,379
Income (loss) from continuing operations before benefit for income taxes	(11,093)	(52,864)	6,012
Provision for income taxes	—	2,119	2,164
Income (loss) from continuing operations	(11,093)	(54,983)	3,848
Discontinued operations:			
Loss from discontinued operations	(6,163)	(34,625)	(13,818)
Loss on disposal	(9,475)	—	—
Benefit for income taxes	—	(8,427)	(4,974)
Loss from discontinued operations	(15,638)	(26,198)	(8,844)
Net loss	\$(26,731)	\$ (81,181)	\$ (4,996)
Basic income (loss) per share:			
Income (loss) from continuing operations	\$ (0.49)	\$ (2.46)	\$ 0.17
Loss from discontinued operations	(0.69)	(1.17)	(0.40)
Net loss	(1.18)	(3.63)	(0.23)
Diluted income (loss) per share:			
Income (loss) from continuing operations	\$ (0.49)	\$ (2.46)	\$ 0.17
Loss from discontinued operations	(0.69)	(1.17)	(0.39)
Net loss	(1.18)	(3.63)	(0.23)
Shares used in per share calculations:			
Basic	22,781	22,433	22,278
Diluted	22,781	22,433	22,879

The accompanying notes are an integral part of these consolidated financial statements.

**AXT, INC.**

**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**

	Preferred Stock		Common Stock		Deferred Compensation	Retained Earnings	Other Comprehensive Income/(loss)	Total	Comprehensive Income/(loss)
	Shares	Amount	Shares	Amount					
(In thousands)									
Balance at December 31, 2000	883	\$ 3,532	21,952	\$ 145,748	\$ (107)	\$ 33,980	\$ 2,194	\$ 185,347	\$ 23,828
Common stock options exercised			388	3,862				3,862	
Issuance of Employee Stock Purchase Plan stock			43	900				900	
Income tax benefit from stock option exercises				3,125				3,125	
Amortization of deferred compensation					107			107	
Comprehensive loss									
Net loss						(4,996)		(4,996)	(4,996)
Unrealized gain (loss) on marketable securities							(2,052)	(2,052)	(2,052)
Currency translation adjustment							29	29	29
Balance at December 31, 2001	883	\$ 3,532	22,383	\$ 153,635	\$ —	\$ 28,984	\$ 171	\$ 186,322	\$ (7,019)
Common stock options exercised			88	684				684	
Issuance of Employee Stock Purchase Plan stock			24	166				166	
Comprehensive loss									
Net loss						(81,181)		(81,181)	(81,181)
Unrealized gain (loss) on marketable securities							(21)	(21)	(21)
Currency translation adjustment							(313)	(313)	(313)
Balance at December 31, 2002	883	\$ 3,532	22,495	\$ 154,485	\$ —	\$ (52,197)	\$ (163)	\$ 105,657	\$ (81,515)
Common stock options exercised			33	73				73	
Issuance of Employee Stock Purchase Plan stock			404	592				592	
Issuance of common stock to board members			25	28				28	
Comprehensive loss									
Net loss						(26,731)		(26,731)	(26,731)
Unrealized gain (loss) on marketable securities							2,482	2,482	2,482
Currency translation adjustment							197	197	197
Balance at December 31, 2003	883	\$ 3,532	22,957	\$ 155,178	\$ —	\$ (78,928)	\$ 2,516	\$ 82,298	\$ (24,052)

The accompanying notes are an integral part of these consolidated financial statements.

**AXT, INC.**
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

	Years Ended December 31,		
	2003	2002	2001
	(In thousands)		
<b>Cash flows from operating activities:</b>			
Net loss	\$(26,731)	\$ (81,181)	\$ (4,996)
Adjustments to reconcile net loss to cash provided by operations:			
Depreciation	5,782	9,493	8,538
Deferred income taxes	—	2,533	(5,041)
Amortization	502	403	554
Stock compensation	28	—	107
Stock option tax benefits	—	—	3,125
Impairment of PP&E	—	39,086	—
Impairment of investments	2,128	10,577	15,636
Loss (gain) on disposal of property, plant and equipment	(11)	3,404	229
Loss on disposal of a discontinued business	9,475	—	—
Changes in assets and liabilities:			
Accounts receivable, net	232	8,489	11,939
Inventories	11,541	17,989	(3,741)
Prepaid expenses	2,217	(320)	1,240
Other assets	(137)	(362)	(454)
Accounts payable	(1,590)	1,285	(7,013)
Accrued liabilities	(5,493)	(5,019)	(2,967)
Income tax receivable	8,783	(6,091)	—
Other long-term liabilities	(457)	439	(12)
Net cash provided by operating activities	<u>6,269</u>	<u>725</u>	<u>17,144</u>
<b>Cash flows from investing activities:</b>			
Purchases of property, plant and equipment	(2,175)	(14,238)	(25,834)
Investment in marketable securities	(5,941)	(17,869)	(21,591)
Investment in other assets	—	—	(1,307)
Proceeds from sale of marketable securities	13,885	17,070	1,034
Proceeds from sale of property and equipment from discontinued opto-electronics business (Note 2)	8,600		
Proceeds from sale of property located in Fremont, California (Note 3)	5,172	—	—
Increase in restricted cash	(5,818)	(1,000)	—
Net cash provided by (used in) investing activities	<u>13,723</u>	<u>(16,037)</u>	<u>(47,698)</u>
<b>Cash flows from financing activities:</b>			
Proceeds from (payments of):			
Issuance of common stock	480	850	4,762
Capital lease payments	(8,409)	(5,965)	(4,274)
Capital lease borrowings	—	—	3,143
Short-term bank borrowings	—	—	(1,353)
Long-term debt borrowings	—	3,935	—
Long-term debt payments	(1,718)	(6,936)	(2,800)
Net cash used in financing activities	<u>(9,647)</u>	<u>(8,116)</u>	<u>(522)</u>
Effect of exchange rate changes	197	(313)	29
Net increase (decrease) in cash and cash equivalents	10,542	(23,741)	(31,047)
Cash and cash equivalents at the beginning of the period	13,797	37,538	68,585
Cash and cash equivalents at the end of the period	<u>\$ 24,339</u>	<u>\$ 13,797</u>	<u>\$ 37,538</u>

Non cash activity:			
Purchases of property, plant and equipment through financing	\$ —	\$ 577	\$ 2,170
<b>Supplemental Disclosures:</b>			
Interest paid	\$ 790	\$ 1,326	\$ 2,081

The accompanying notes are an integral part of these consolidated financial statements.

**AXT, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**Note 1. The Company and Summary of Accounting Policies**

***The Company***

AXT designs, develops, manufactures and distributes high-performance compound semiconductor substrates. AXT's substrate products are used primarily in wireless communications, lighting display applications, and fiber optic communications.

On June 24, 2003, the Company's Board of Directors approved management's plan to exit the Company's unprofitable Opto-electronics business. Substantially all of the assets of this division were sold in September 2003. The decision to dispose of the business was due to continuing operating losses and negative cash flows from the division and significant uncertainty regarding future profitability.

The Company officially changed its name from American Xtal Technology, Inc. to AXT, Inc. on July 7, 2000.

***Use of Estimates***

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ materially from these estimates.

***Principles of Consolidation***

The consolidated financial statements include the accounts of the Company and its majority-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated. Investments in business entities in which AXT does not have control, but has the ability to exercise significant influence over operating and financial policies (generally 20-50% ownership), are accounted for by the equity method.

***Foreign Currency Translation***

The functional currencies of the Company's Japanese and Chinese subsidiaries are the local currencies. Transaction gains and losses resulting from transactions denominated in currencies other than the U.S. dollar for the Company or in the functional currencies for the subsidiaries are included in other (income) expense for the periods presented.

The assets and liabilities of the subsidiaries are translated at the rates of exchange on the balance sheet date. Revenue and expense items are translated at the average rate of exchange for the period. Gains and losses from foreign currency translation are included in other comprehensive income in stockholders' equity.

***Revenue Recognition***

The Company recognizes revenue upon the shipment of its products to the customer provided that the Company has received a signed purchase order, the price is fixed or determinable, title has transferred, collection of resulting receivables is probable, product returns are reasonably estimable, there are no customer acceptance requirements and there are no remaining significant obligations. The Company provides for future returns based on historical experience at the time revenue is recognized. The Company does not provide for warranty related exposure as such exposure has historically been immaterial.

**AXT, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

***Fair Value of Financial Instruments***

The reported amounts of certain of the Company's financial instruments including cash and cash equivalents, accounts receivable, short-term investments, accounts payable and accrued liabilities approximate fair value due to their short maturities. The reported amounts of short-term and long-term debt approximate fair value due to the market interest rates that these debts bear, and interest rates currently available to the Company.

***Concentration of Credit Risk***

Financial instruments, which potentially subject the Company to concentration of credit risk, consist primarily of cash and cash equivalents and trade accounts receivable. The Company performs ongoing credit evaluations of its customers' financial condition, and limits the amount of credit extended when deemed necessary, but generally does not require collateral. The Company invests primarily in money market accounts and commercial paper instruments. Cash equivalents are maintained with high quality institutions and their composition and maturities are regularly monitored by management.

No customer represented greater than 10% of product revenues for the years ended December 31, 2003, 2002 and 2001. The company's top five customers represented 28.9% of product revenue for the year ended December 31, 2003, 31.4% of product revenue for the year ended December 31, 2002, and 31.1% of product revenue for the year ended December 31, 2001. We expect that sales to certain customers will continue to comprise a significant portion of our revenue in the future.

No customer accounted for 10% or more of the trade accounts receivable balance as of December 31, 2003 and 2002.

***Cash Equivalents***

The Company considers all highly liquid debt instruments purchased with an original maturity of three months or less to be cash equivalents.

***Investments***

Management determines the appropriate classification of investments at the time of purchase. Available-for-sale investments are carried at their fair value based on quoted market prices as of the balance sheet date. The amortized cost of securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization is included in "other (income) and expense, net." Realized gains or losses are determined on the specific identification method and are reflected in "other (income) and expense, net." Net unrealized gains or losses are recorded directly in stockholders' equity. Those unrealized losses that are deemed to be other than temporary are reflected in "interest and other income, net." The Company also maintains minority investments in private companies which are accounted for under the costs basis. These investments are reviewed for other than temporary declines in value on a quarterly basis. Reasons for other than temporary declines in value include whether the related company would have insufficient cash flow to operate for the next twelve months, significant changes in the operating performance and changes in market conditions.

***Inventories***

Inventories are stated at the lower of cost (approximated by standard cost) or market. Cost is determined using the weighted average cost method. Finished goods and work-in-process inventories include material, labor and manufacturing overhead costs.

**AXT, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

***Property, Plant and Equipment***

Property, plant and equipment are stated at cost less accumulated depreciation computed using the straight-line method over the estimated economic lives of the assets, which vary from 3 to 27.5 years. Leasehold improvements are amortized over the shorter of the estimated useful life or the term of the lease. We generally depreciate computers and software over 3 years, automobiles over 5 years, office equipment, furniture and fixtures over 3 years, leasehold improvements over 10 years, and buildings over 27.5 years. Depreciation expense was \$5.8 million, \$9.5 million, and \$8.5 million for the years ended 2003, 2002, and 2001 respectively.

***Impairment of Long-Lived Assets***

Management evaluates the recoverability of property, equipment, and intangible assets in accordance with Statement of Financial Accounting Standards No. 144, or SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." When events and circumstance indicate that long-lived assets may be impaired, management compares the carrying value of the long-lived assets to the projection of future undiscounted cash flows attributable to such assets and in the event that the carrying value exceeds the future undiscounted cash flows, management records an impairment charge against income equal to the excess of the carrying value over the asset's fair value.

***Stock-Based Compensation***

The Company accounts for stock-based employee compensation arrangements using the intrinsic value method as prescribed in Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" and related interpretations thereof. Accordingly, compensation cost for stock options is measured as the excess, if any, of the market price of the Company's stock at the date of grant over the stock option exercise price. In addition, the Company provides additional disclosure provisions as required under Statement of Financial Accounting Standard No. 123, "Accounting for Stock-Based Compensation" and SFAS 148, "Accounting for Stock-Based Compensation — Transition and Disclosure" in Note 13.

***Research and Development***

Research and development costs are expensed as incurred.

***Income Taxes***

The Company accounts for deferred income taxes using the liability method, under which the expected future tax consequences of timing differences between the book and tax basis of assets and liabilities are recognized as deferred tax assets and liabilities. Valuation allowances are established when necessary to reduce net deferred tax assets when management estimates, based on available objective evidence, that it is more likely than not that the future income tax benefit represented by the net deferred tax asset will not be realized.

***Comprehensive Income***

Comprehensive income is defined as the change in equity of a company during a period from transactions and other events and circumstances, excluding transactions resulting from investment by owners and distribution to owners. The difference between net income and comprehensive income for the Company relates to foreign currency translation adjustments and unrealized gains and losses on investment securities. Comprehensive income for the years ended December 31, 2003, 2002 and 2001 is disclosed in the "Consolidated Statements of Stockholders' Equity."

**AXT, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

***Basic and Diluted Net Income (Loss) Per Share***

Basic income (loss) per share is computed by dividing the income (loss) available to holders of common stock for the period by the weighted average number of shares of common stock outstanding during the period. The calculation of diluted income (loss) per share excludes potential common stock if the effect of such stock is antidilutive. Potential common stock consists of common shares issuable upon the exercise of stock options.

***Reclassifications***

Certain reclassifications have been made to the prior years' consolidated financial statements to conform to current period presentation.

***Recent Accounting Pronouncements***

In November 2002, the FASB issued FASB Interpretation No. 45 (FIN 45), "*Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others.*" FIN No. 45 requires that a liability be recorded in the guarantor's balance sheet upon issuance of a guarantee. In addition, FIN No. 45 requires disclosures about the guarantees that an entity has issued, including a reconciliation of changes in the entity's product warranty liabilities. The initial recognition and initial measurement provisions of FIN No. 45 are applicable on a prospective basis to guarantees issued or modified after December 31, 2002, irrespective of the guarantor's fiscal year-end. The disclosure requirements of FIN No. 45 are effective for financial statements of interim or annual periods ending after December 15, 2002. Our adoption of FIN No. 45 did not have a material effect on our consolidated financial statements.

In January 2003, the FASB issued FASB Interpretation No. 46 (FIN 46), "*Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51.*" FIN 46 requires certain variable interest entities to be consolidated by the primary beneficiary of the entity if the equity investors in the entity do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support from other parties. FIN 46 is effective immediately for all new variable interest entities created or acquired after January 31, 2003. For variable interest entities created or acquired prior to February 1, 2003, the provisions of FIN 46 must be applied for the first interim or annual period beginning after December 15, 2003. Our adoption of FIN No. 46 did not have a material effect on our consolidated financial statements.

In March 2003, the Emerging Issues Task Force, or EITF, reached a consensus on EITF Issue No. 00-21, "*Revenue Arrangements with Multiple Deliverables.*" EITF Issue No. 00-21 requires revenue arrangements with multiple deliverables to be divided into separate units of accounting if the deliverables in the arrangement meet certain criteria. The arrangement's consideration should be allocated among the separate units of accounting based on their relative fair values. Applicable revenue recognition criteria should be considered separately for each unit. The provisions of EITF Issue No. 00-21 are effective for revenue arrangements entered into in fiscal periods beginning after June 15, 2003. Our adoption of EITF Issue No. 00-21 did not have a material effect on our consolidated financial statements.

In April 2003, the FASB issued SFAS No. 149, "*Amendment of Statement 133 on Derivative Instruments and Hedging Activities.*" This Statement amends and clarifies financial accounting and reporting for derivative instruments, including certain derivative instruments embedded in other contracts (collectively referred to as derivatives), and for hedging activities under SFAS No. 133, "*Accounting for Derivative Instruments and Hedging Activities.*" This Statement is effective for contracts entered into or modified after June 30, 2003, and for hedging relationships designated after June 30, 2003. Our adoption of SFAS No. 149 did not have a material effect on our consolidated financial statements.

In May 2003, the FASB issued SFAS No. 150, "*Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity.*" SFAS No. 150 establishes standards for an issuer to classify

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

and measure certain financial instruments with characteristics of both liabilities and equity. This Statement requires an issuer to classify a financial instrument that meets certain characteristics as a liability (or an asset in some circumstances). This Statement is effective for financial instruments entered into or modified after May 31, 2003, and otherwise is effective at the beginning of the first interim period beginning after June 15, 2003. Our adoption of SFAS No. 150 did not have a material effect on our consolidated financial statements.

**Note 2. Discontinued Operations**

On June 24, 2003, the Company announced the discontinuation of its opto-electronics division, which was established as part of the acquisition of Lyte Optronics, Inc. in May 1999. Accordingly, the results of operations of the opto-electronics division have been segregated from continuing operations and are reported separately as discontinued operations in the consolidated statements of operations. The discontinued opto-electronics division manufactured blue, cyan, and green high-brightness light emitting diodes (HBLEDs) for the illumination markets, including full-color displays, wireless handset backlighting and traffic signals, and also manufactured vertical cavity surface emitting lasers (VCSELs) and laser diodes for fiber optic communications and storage area networks.

On September 27, 2003 the Company completed a sale of substantially all of the assets of its opto-electronics business to Lumei Optoelectronics, Corp. and Dalian Luming Science and Technology Group, Co., Ltd. for the Chinese Renminbi equivalent of \$9.6 million. Proceeds of \$1.0 million will be held in escrow for up to one year and will not be recorded until all claims, if any, are settled. If unclaimed, up to \$250,000 of the sale proceeds will be held in escrow for a second year and will not be recorded until all claims, if any, are settled. The Company retains a building located in Monterey Park, CA, that it expects to sell in 2004. This asset is classified as Held for Sale on the consolidated balance sheet at December 31, 2003.

The Company recorded a loss on disposal of \$9.5 million to write-down the book value of assets sold to their estimated fair market value.

The Company's financial statements have been presented to reflect the opto-electronics business as a discontinued operation for all periods presented. Operating results of the discontinued operation are as follows:

	Years Ended December 31,		
	2003	2002	2001
Revenue	\$ 7,245	\$ 18,310	\$ 10,730
Cost of revenue	9,972	20,273	14,697
Gross profit (loss)	(2,727)	(1,963)	(3,967)
Operating expenses:			
Selling, general and administrative	2,297	4,788	4,279
Research and development	814	2,529	4,328
Impairment costs	—	24,454	—
Total operating expenses	3,111	31,771	8,607
Loss from operations	(5,838)	(33,734)	(12,574)
Interest expense	325	891	1,244
Loss before benefit for income taxes and loss on disposal	(6,163)	(34,625)	(13,818)
Income tax (benefit)	—	(8,427)	(4,974)
Loss on disposal	(9,475)	—	—
Net loss	\$(15,638)	\$(26,198)	\$ (8,844)

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

The carrying value of the assets and liabilities of the discontinued opto-electronics business included in the consolidated balance sheets are as follows:

	Years Ended December 31,	
	2003	2002
Current assets:		
Cash	\$ 539	\$ 336
Accounts receivable, net	250	3,224
Inventories	—	3,439
Assets held for sale	1,000	—
Other current assets	—	2,482
Total current assets	1,789	9,481
Property, plant and equipment	—	14,854
Other assets	200	200
Total assets	\$1,989	\$24,535
Current liabilities:		
Accounts payable	\$ 43	\$ 1,975
Accrued liabilities	1,232	2,806
Total liabilities	1,275	4,781
Net assets	714	19,754
Total liabilities and net assets	\$1,989	\$24,535

Assets held for sale consist of a building and are carried at management's estimated fair value less costs to sell, totaling \$1.0 million at December 31, 2003.

**Note 3. Assets Held for Sale**

Assets held for sale at December 31, 2003 consist of a property located in Monterey Park, California, which is part of the Company's discontinued opto-electronics division (see Note 2). Assets held for sale at December 31, 2002 consist of a property located at 4281 Technology Drive, Fremont, California. In November of 2002, the Company entered into a contract to sell this property to a third party. On March 11, 2003, the Company completed the sale of its property located at 4281 Technology Drive, Fremont, California, for \$6.3 million. Net cash proceeds from the sale were \$5.2 million. The gain the Company incurred on this transaction was less than \$15,000. Under the terms of the sale agreement, the Company has agreed to lease back the property for a ten-year period. Accordingly, on March 11, 2003, the Company signed an operating lease for this property through March 2013. Annual rent under this operating lease is approximately \$600,000.

**Note 4. Inventories**

Inventories are stated at the lower of cost or net realizable value. Cost is determined using the weighted average cost method. Finished goods and work-in-process inventories include material, labor and manufacturing overhead costs. The Company routinely evaluates the levels of its inventory in light of current market conditions in order to identify excess and obsolete inventory and provides a valuation allowance for certain inventories based upon the age and quality of the product.

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

The components of inventory are summarized below (in thousands):

	Years Ended December 31,	
	2003	2002
Inventories:		
Raw materials	\$ 7,086	\$ 12,559
Work in process	16,027	22,950
Finished goods	970	2,089
	<u>\$24,083</u>	<u>\$37,598</u>

**Note 5. Debt*****Credit Facility***

At December 31, 2003 the credit facility maintained by the Company with a bank included a letter of credit supporting repayment of its industrial bonds with an outstanding amount of \$8.5 million. The Company has pledged and placed cash and certain investment securities with the trust department of the bank as additional collateral for this facility. The Company has also pledged cash for a credit facility for workers compensation insurance. As a result, \$9.3 million of cash and long-term investments are restricted.

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)****Long-Term Debt**

The components of long-term debt are summarized below (in thousands):

	Year Ended December 31,	
	2003	2002
Various notes payable to banks, secured by certain equipment, bearing interest at fixed rates between 4.55% and 4.72%	\$ —	\$ 1,083
Debenture loan to Bay Area Employment Development Company, guaranteed by the U.S. Small Business Administration, bearing interest at a fixed rate of 7.27%, maturing October 2016	788	823
Taxable revenue bonds, secured by a letter of credit from a bank, bearing interest at the H15 30 day bond yield for commercial paper which was 1.35% on December 31, 2003, maturing December 2023	8,450	9,050
Notes payable to a bank, secured by certain equipment in China, bearing interest at a fixed rate of 5.49%, maturing December 2004	3,298	3,298
	<u>12,536</u>	<u>14,254</u>
Less current portion	(3,694)	(965)
	<u>\$ 8,842</u>	<u>\$ 13,289</u>
Maturities of long-term debt at December 31, 2003 were as follows:		
2004	3,694	
2005	514	
2006	459	
2007	462	
2008	466	
Thereafter	6,941	
	<u>\$ 12,536</u>	

**Note 6. Investments in Marketable Securities**

The Company classifies its investment securities as available-for-sale securities as prescribed by Statement of Financial Accounting Standards No. 115 or SFAS 115, "Accounting for Certain Investments in Debt and Equity Securities." All investments are carried at fair market value, which is determined based on

**AXT, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

quoted market prices, with net unrealized gains and losses included in comprehensive income, net of tax. The components of investments at December 31, 2003 are summarized below (in thousands):

Available for Sale	Cost	Unrealized Gain/(Loss)	Aggregate Fair Value
Money market	\$ 17,495	\$ —	\$ 17,495
Corporate bonds	8,469	378	8,847
Government agency bonds	4,155	(344)	3,811
Corporate equity securities	1,115	2,560	3,675
	<u>\$ 31,234</u>	<u>\$ 2,594</u>	<u>\$ 33,828</u>
Recorded as:			
Cash equivalents	\$ 9,857		
Short-term investments	14,669		
Restricted deposits	9,302		
	<u>\$ 33,828</u>		

**Note 7. Corporate Affiliates**

The Company's corporate affiliates are summarized below (in thousands):

Affiliate	Investment Balance at December 31,		Accounting Method	Ownership Percentage
	2003	2002		
Xilingol Tongli Ge Co. Ltd.	\$ 822	\$ 773	Equity	25%
Emeishan Jia Mei High Pure Metals Co., Ltd.	603	614	Equity	25%
Beijing Ji Ya Semiconductor Material Co., Ltd.	1,071	1,071	Consolidated	51%
Nanjing Jin Mei Gallium Co., Ltd.	616	616	Consolidated	88%
Beijing BoYu Manufacturing Co., Ltd	409	409	Consolidated	70%

The investment balances for those affiliates accounted for under the equity method are included within "Other assets" in the consolidated balance sheets.

Undistributed retained earnings relating to the Company's corporate affiliates, was \$769,000 at December 31, 2003 and \$861,000 at December 31, 2002. Net income/(loss) recorded from the Company's corporate affiliates was (\$92,000) for the year ended December 31, 2003, \$131,000 for 2002, and \$701,000 for 2001.

The Company invested in these companies because each provides materials that are important to the Company's substrate business, each can provide products at lower cost than other suppliers, and each has a market beyond that provided by the Company. At December 31, 2003, the Company had no obligations to make further investments in any of these companies, although it may choose to do so under certain conditions.

**Note 8. Impairment of Investments**

The Company also maintains minority investments in private companies which are accounted for under the cost basis. These investments are reviewed for other than temporary declines in value on a quarterly basis. Reasons for other than temporary declines in value include whether the related company would have insufficient cash flow to operate for the next twelve months, significant changes in the operating performance and changes in market conditions. In 2003, the Company recorded \$2.0 million in charges to other expense to

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

write down its investment in two private US companies. As of December 31, 2003, the minority investments the Company continues to hold totaled \$602,000.

**Note 9. Balance Sheet Detail**

The components of selected balance sheet accounts are summarized below (in thousands):

	Years Ended December 31,	
	2003	2002
Accounts receivable:		
Accounts receivable, gross	\$ 10,601	\$ 13,871
Allowance for doubtful accounts	(4,304)	(6,676)
	<u>\$ 6,297</u>	<u>\$ 7,195</u>
The reduction in allowance for doubtful accounts was due to the collection of previously written-down receivables.		
Property, plant and equipment:		
Land	\$ 1,120	\$ 1,722
Building	17,180	15,849
Machinery and equipment	8,275	13,142
Leasehold improvements	443	2,600
Construction in progress	1,150	7,260
	<u>28,168</u>	<u>40,573</u>
Less: accumulated depreciation and amortization	(6,373)	(591)
	<u>\$ 21,795</u>	<u>\$ 39,982</u>
Accrued liabilities:		
Accrued compensation	\$ 1,012	\$ 1,304
Customer deposits	994	2,196
Accrued restructuring costs	—	1,254
Income tax payable	3,063	3,063
Other	3,227	3,590
	<u>\$ 8,296</u>	<u>\$ 11,407</u>

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)****Note 10. Income Taxes**

The components of the benefit for income taxes for income (loss) are summarized below (in thousands):

	Years Ended December 31,		
	2003	2002	2001
Current:			
Federal	\$ —	\$(8,841)	\$ 1,917
State	—	—	—
Foreign	—	—	314
Total current	—	(8,841)	2,231
Deferred:			
Federal	—	1,301	(3,481)
State	—	1,232	(1,560)
Total deferred	—	2,533	(5,041)
Total net benefit for income taxes	\$ —	\$(6,308)	\$ (2,810)

A reconciliation of the effective income tax rates and the U.S. statutory federal income tax rate is summarized below:

	Years Ended December 31,		
	2003	2002	2001
Statutory federal income tax rate	(35.00)%	(35.0)%	(35.0)%
State income taxes, net of federal tax benefits	(1.71)%	(2.7)%	(5.0)%
Foreign sales corporation benefit	0.00%	0.0%	0.0%
Unbenefited losses and credits	35.83%	29.9%	0.0%
Change in valuation allowance	0.00%	2.8%	0.0%
Other	0.88%	(2.2)%	4.0%
Effective tax rate	0.00%	(7.2)%	(36.0)%

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Deferred tax assets and liabilities are summarized below (in thousands):

	Years Ended December 31,	
	2003	2002
Deferred tax assets:		
Accruals and reserves not yet deductible	\$ 7,624	\$ 15,337
Net operating loss	28,170	8,923
Depreciation	—	5,519
Credits	4,212	3,477
	<u>\$ 40,006</u>	<u>\$ 33,256</u>
Deferred tax liabilities:		
Unrealized appreciation on Finisar marketable securities	—	—
State taxes	(526)	(980)
Gain on receipt of Finisar marketable securities	—	—
Unrepatriated Foreign Earnings	(1,239)	(1,085)
Depreciation	(3,634)	—
	<u>\$ (5,399)</u>	<u>\$ (2,065)</u>
Net deferred tax assets	\$ 34,607	\$ 31,191
Valuation allowance	(34,607)	(31,191)
Net deferred tax assets	<u>—</u>	<u>—</u>

At December 31, 2003, the Company had federal and state net operating loss carryforwards of approximately \$75.9 million and \$31.4 million, respectively, which will expire beginning in 2020 and 2005, respectively. In addition, the Company had federal tax credit carryforwards of approximately \$1.6 million, which will expire beginning in 2019. The Company also has state tax credit carryforwards of approximately \$2.7 million which will expire beginning 2007.

The deferred tax assets valuation allowance at December 31, 2003 is attributed to U.S. federal, and state deferred tax assets, which result primarily from future deductible accruals, reserves, net operating loss carryforwards, and tax credit carryforwards. The Company believes that, based on a number of factors, the available objective evidence creates sufficient uncertainty regarding the realizability of the deferred tax assets such that a full valuation allowance has been recorded. These factors include the Company's history of losses, and the lack of carryback capacity to realize deferred tax assets.

In accordance with Section 382 of the Internal Revenue Code, the amounts of and benefits from net operating loss and tax credit carryforwards may be impaired or limited in certain circumstances. Events which cause limitations in the amount of net operating losses or credits that the Company may utilize in any one year include, but are not limited to, a cumulative ownership change of more than 50% as defined, over a three year period.

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)****Note 11. Net loss per Share**

A reconciliation of the numerators and denominators of the basic and diluted net loss per share calculations is as follows (in thousands, except per share data):

	Years Ended December 31,		
	2003	2002	2001
<b>Numerator:</b>			
Income (loss) from continuing operations	\$ (11,093)	\$ (54,983)	\$ 3,848
Loss from discontinued operations	(15,638)	(26,198)	(8,844)
Less: Preferred stock dividends	(177)	(177)	(177)
<b>Net loss to common stockholders</b>	<b>\$ (26,908)</b>	<b>\$ (81,358)</b>	<b>\$ (5,173)</b>
<b>Denominator:</b>			
Denominator for basic net loss per share — weighted average common shares	22,781	22,433	22,278
Effect of dilutive securities:			
Common stock options	—	—	601
<b>Denominator for dilutive net loss per share</b>	<b>22,781</b>	<b>22,433</b>	<b>22,879</b>
<b>Basic income (loss) per share:</b>			
Income (loss) from continuing operations	\$ (0.49)	\$ (2.46)	\$ 0.17
Loss from discontinued operations	(0.69)	(1.17)	(0.40)
Net loss to common stockholders	(1.18)	(3.63)	(0.23)
<b>Diluted income (loss) per share:</b>			
Income (loss) from continuing operations	\$ (0.49)	\$ (2.45)	\$ 0.17
Loss from discontinued operations	(0.69)	(1.17)	(0.39)
Net loss to common stockholders	(1.18)	(3.63)	(0.23)
Options excluded from diluted net loss per share as the impact is antidilutive	2,326	2,867	2,107

**Note 12. Stockholders' Equity**

In May 1998, the Company completed its initial public offering, or IPO, and issued 2,875,000 shares of its common stock at \$10.00 per share, including the shares from the exercise of the underwriters' over-allotment option. The Company received cash of approximately \$25.8 million net of underwriting discounts, commissions and IPO expenses. Upon the closing of the IPO, all outstanding shares of the Company's then convertible preferred stock were automatically converted into shares of common stock.

On May 28, 1999, the Company completed its acquisition of Lyte Optronics, Inc. Under the terms of the acquisition, the Company issued approximately 2,023,000 shares of common stock and 883,000 shares of non-voting and non-convertible preferred stock, in exchange for all of the issued and outstanding shares of the capital stock of Lyte. Dividends accrue on non-convertible preferred stock at the rate of \$0.20 per annum per share and are payable when declared by the board of directors of the Company or in the case of a change in control. The preferred stock has a \$4 per share liquidation preference over common stock.

On July 25, 2000 the Company completed a private securities offering, raising approximately \$8.5 million in exchange for 234,115 shares of common stock.

**AXT, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

On September 19, 2000, the Company sold, pursuant to an underwritten public offering, 2,510,000 shares of its common stock at a price of \$34.25 per share, including the shares from the exercise of the underwriters' over-allotment option. The Company received cash of approximately \$80.8 million net of underwriting discounts, commissions and expenses. Following the public offering, proceeds were used to repay its line of credit and for general corporate purposes.

**Note 13. Employee Benefit Plans**

**Stock Option Plans**

In March 1993, the Company's board of directors approved the 1993 Stock Option Plan ("1993 Plan"), which provided for granting of incentive and non-qualified stock options to employees and directors of the Company. Under the 1993 Plan, 880,000 shares of common stock were reserved for issuance as of December 31, 1998. Options granted under the 1993 Plan were generally for periods not to exceed ten years and were granted at the fair market value of the stock at the date of grant as determined by the board of directors. Options granted under the 1993 Plan generally vested 25.0% upon grant and 25.0% each year thereafter, with full vesting occurring on the third anniversary of the grant date. This plan terminated on March 12, 2003.

In July 1997, the Company's board of directors approved the 1997 Stock Option Plan ("1997 Plan"), which provides for granting of incentive and non-qualified stock options to employees and directors of the Company. Under the 1997 Plan, 5,901,501 shares of common stock have been reserved for issuance as of December 31, 2003. Options granted under the 1997 Plan are generally for periods not to exceed ten years (five years if the option is granted to a 10.0% stockholder) and are granted at the fair market value of the stock at the date of grant as determined by the board of directors. Options granted under the 1997 Plan generally vest 25.0% at the end of one year and 2.1% each month thereafter, with full vesting after four years.

The following summarizes the Company's stock option activity under the 1993 Plan and the 1997 Plan, and related weighted average exercise price within each category for each of the years ended December 31, 2001, 2002, and 2003:

	Available For Grant	Number of Shares	Price per Share	Price per Share
Balance at December 31, 2000	2,936,898	2,495,229		\$20.46
Granted	(1,693,070)	1,693,070	\$10.30 - 43.88	16.71
Exercised	—	(388,617)	5.00 - 39.00	9.94
Cancelled	485,272	(485,272)	5.00 - 44.25	22.14
Balance at December 31, 2001	1,729,100	3,314,410		\$19.63
Granted	(1,137,450)	1,137,450	\$ 1.92 - 15.90	3.06
Exercised	—	(23,791)	5.00 - 9.125	6.94
Cancelled	863,204	(863,204)	5.00 - 42.50	20.10
Balance at December 31, 2002	1,454,854	3,564,865		\$ 14.15
Granted	(1,116,964)	1,116,964	\$ 0.84 - 3.11	2.29
Exercised	—	(32,815)	2.19 - 2.19	2.19
Cancelled	2,060,178	(2,060,178)	1.38 - 43.88	15.64
Balance at December 31, 2003	2,398,068	2,588,836		\$ 10.79

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Information about stock options outstanding at December 31, 2003 is summarized below:

Range of Exercise Prices	Options Outstanding		Options Exercisable	
	Number Outstanding	Weighted Average Remaining Contractual Life	Number Outstanding	Weighted Average Exercise Price
\$ 0.84 - 1.34	8,500	9.12	677	\$ 0.84
1.38 - 1.38	462,900	9.55	—	—
1.40 - 2.10	42,000	9.48	3,937	1.61
2.19 - 2.19	646,330	8.89	177,043	2.19
2.74 - 3.01	16,000	9.94	—	—
3.11 - 3.11	522,754	10.00	289,064	3.11
5.00 - 12.12	393,375	5.90	270,501	7.84
12.90 - 22.69	274,310	7.00	160,643	17.06
24.00 - 39.80	217,667	6.37	153,501	26.40
\$41.50 - 41.50	5,000	6.43	4,167	41.50
	<u>2,588,836</u>	<u>8.38</u>	<u>1,059,533</u>	<u>\$ 9.80</u>

**Stock-Based Compensation Under APB No. 25**

In connection with certain stock option grants the Company recorded deferred compensation costs totaling \$203,000 for the year ended December 31, 1998. Compensation cost is the difference between the exercise price and the deemed fair value at the date of grant. Compensation cost is being amortized over the vesting period relating to these options, of which no amount was amortized for the years ended December 31, 2003 and 2002, and \$107,000 was amortized for the year ended December 31, 2001.

**Certain Pro Forma Disclosures**

As required under Statement of Financial Accounting Standards No. 123 (SFAS 123), "Accounting for Stock-Based Compensation," and Statement of Financial Accounting Standards No. 148 (SFAS 148), "Accounting for Stock-Based Compensation Transition and Disclosure," the pro forma effects of stock-based compensation on net income and net earnings per common share have been estimated at the date of grant using the Black-Scholes option-pricing model.

The Black-Scholes option-pricing model was developed for use in estimating the fair value of traded options that have no restrictions and are fully transferable and negotiable in a free trading market. Black-Scholes does not consider the employment, transfer or vesting restrictions that are inherent in the Company's employee options. Use of an option valuation model, as required by SFAS 123, includes highly subjective assumptions based on long-term predictions, including the expected stock price volatility and average life of each option grant. Because the Company's employee options have characteristics significantly different from those of freely traded options, and because changes in the assumptions underlying the option-pricing model can materially affect the Company's estimate of the fair value of those options, in the Company's opinion, the existing valuation models, including Black-Scholes, are not reliable single measures and may misstate the fair value of the Company's employee options.

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

The Company calculated the fair value of each option grant on the date of grant using the Black-Scholes option pricing model as prescribed by SFAS No. 123 using the following assumptions:

	Years Ended December 31,		
	2003	2002	2001
Risk free interest rate	2.9%	3.0%	3.9%
Expected life (in years)	5.0	5.0	5.0
Dividend yield	0.0%	0.0%	0.0%
Volatility	109.0%	101.0%	104.0%

The weighted average grant-date fair value of options granted during the year ended December 31, 2003 was \$1.19, \$2.39 in 2002 and \$12.97 in 2001.

Had compensation cost for the Company's options been determined based on the fair value at the grant dates, as prescribed in SFAS 123 and SFAS 148, the Company's pro forma net earnings and net earnings per share would have been as summarized below (in thousands except per share data):

	Years Ended December 31,		
	2003	2002	2001
Net loss:			
As reported	\$(26,731)	\$(81,181)	\$(4,996)
Pro forma option expense	7,323	9,182	7,046
Pro forma net loss	\$(34,054)	\$(90,363)	\$(12,042)
Net loss per share:			
As reported:			
Basic	\$ (1.18)	\$ (3.63)	\$ (0.23)
Diluted	(1.18)	(3.63)	(0.23)
Pro forma net loss:			
Basic	\$ (1.49)	\$ (4.04)	\$ (0.54)
Diluted	(1.49)	(4.04)	(0.54)

Because additional option grants are expected to be made each year, the above pro forma disclosures are not representative of pro forma effects on reported net income for future years.

***Employee Stock Purchase Plan***

In February 1998, the Company's board of directors approved the 1998 Employee Stock Purchase Plan (the "1998 Purchase Plan"). The Company's stockholders approved the 1998 Purchase Plan in March 1998. At December 31, 2003 a total of 900,000 shares of the Company's common stock were reserved for issuance under the 1998 Purchase Plan. A total of 683,000 shares were purchased as of December 31, 2003. The 1998 Purchase Plan permits eligible employees to acquire shares of the Company's common stock through payroll deductions. The common stock purchase price is determined as 85.0% of the lower of the market price of the common stock at the purchase date or the date of offer to the employee.

***Retirement Savings Plan***

The Company has a 401(k) Savings Plan (the "Savings Plan") which qualifies as a thrift plan under Section 401(k) of the Internal Revenue Code. All full-time U.S. employees are eligible to participate in the Savings Plan after 90 days from the date of hire. Participants may contribute up to 10.0% of their earnings to the Savings Plan with a discretionary matching amount provided by the Company. The Company's

**AXT, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

contributions to the Savings Plan were \$191,000 for the year ended December 31, 2003, \$315,000 for 2002 and \$456,000 for 2001.

**Note 14. Voluntary Stock Option Exchange Program**

On May 27, 2003, the Company announced a voluntary stock option exchange program for our employees. Under the program, option holders, excluding our executive officers and independent directors, had the opportunity to cancel outstanding options with an exercise price in excess of \$2.10 per share in exchange for new options to be granted at a future date that was at least six months and one day after the date of cancellation, which was June 30, 2003. The number of shares of common stock subject to the new options was equal to 75% of the number subject to the exchanged options. Under the exchange program, options to purchase an aggregate of 738,027 shares of our common stock, representing approximately 48% of the options that were eligible to be tendered in the Offer as of May 27, 2003, were tendered and cancelled. New options will vest at the same rate as the exchanged options and have an exercise price equal to the fair market value of our common stock at the new grant date, which was \$3.11 per share. On December 31, 2003, the Company granted options to purchase an aggregate of 522,754 shares of our common stock in exchange for such tendered options.

**Note 15. Segment and Foreign Operations Information**

The Company has one operating segment comprising of the design, development, manufacture and distribution of high-performance compound semiconductor substrates.

The Company sells its substrates products in the United States and in other parts of the world. Also, the Company has operations in Japan and China. Revenues by geographic location based on the country of the customer were as follows (in thousands):

	Years Ended December 31,		
	2003	2002	2001
Net revenues:			
United States	\$ 11,823	\$ 25,185	\$ 57,137
Europe	5,638	5,508	21,341
Canada	186	1,023	6,643
Taiwan	7,055	4,246	10,441
Japan	4,167	3,000	8,355
Asia Pacific (excluding Japan and Taiwan)	5,844	5,903	4,883
Consolidated	<u>\$34,713</u>	<u>\$44,865</u>	<u>\$108,800</u>

Property, plant and equipment by geographic location is summarized below (in thousands):

	Years Ended December 31,	
	2003	2002
Property, plant and equipment, net:		
United States	\$ 7,583	\$ 21,133
China	14,212	18,849
	<u>\$21,795</u>	<u>\$39,982</u>

**AXT, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**Note 16. Related Party Transactions**

Since January 2002, there has not been, nor is there currently proposed, any transaction or series of similar transactions to which the Company was or is to be a party in which the amount involved exceeds \$60,000, and in which any director, executive officer or holder of more than 5% of any class of the Company's voting securities or members of that person's immediate family had or will have a direct or indirect material interest other than the transactions described below.

The Company entered into an operating lease in July 2001 for warehouse space in Fremont, CA with 4160 Business Center, LLC, a real estate holding company, in which Davis Zhang, the president of our substrate division, is the sole shareholder. Lease payments to 4160 Business Center, LLC were approximately \$121,000 for the three months ended March 31, 2003. In April of 2003, Mr. Zhang sold this warehouse to a party unrelated to the Company. The Company began leasing this warehouse from the new owner on the date of sale. Mr. Zhang will continue to hold a \$3.7 million note on the property through April 2005.

**Note 17. Commitments and Contingencies**

From time to time we are involved in judicial or administrative proceedings concerning matters arising in the ordinary course of our business. We do not expect that any of these matters, individually or in the aggregate, will have a material adverse effect on our business, financial condition, cash flows or results of operation.

On April 15, 2003, Sumitomo Electric Industries, Ltd., (SEI) filed a complaint in the Tokyo District Court, Civil Division against us and our Japanese distributor alleging patent infringement of two patents held by SEI in Japan. The suit seeks penalties from AXT in the amount of \$1.67 million plus interest and court costs and the cessation of AXT's sales of gallium arsenide substrates in Japan. AXT intends to defend itself vigorously in these lawsuits and continues to sell its products in Japan.

On June 11, 2003, Cree, Inc. filed a complaint in the United States Court for Northern District of California against the Company alleging patent infringement. The complaint sought damages and injunction against infringement. On July 23, 2003, the Company filed a counter complaint in the United States Court for Northern District of California, denying any patent infringement and alleging that Cree's actions were intentionally designed to interfere with the Company's prospective business relationships. The Company reached an agreement with Cree resolving the disputes between us and signed a settlement agreement on March 5, 2004. The resolution of the disputes did not have a material adverse impact on the Company's consolidated financial position or results of operations.

The Company has entered into contracts to supply several large customers with GaAs wafers. The contracts guarantee the delivery of a certain number of wafers between January 1, 2001 and December 31, 2004 with a current contract value of \$2.0 million. The contract sales prices are subject to review quarterly and can be adjusted in the event that raw material prices change. In the event of non-delivery of the determined wafer quantities in any monthly delivery period, the Company could be subject to non-performance penalties of between 5% and 10% of the value of the delinquent monthly deliveries. The Company has not received any claims for non-performance penalties due to non-delivery. Partial prepayments received for these supply contracts totaling \$994,000 are included in accrued liabilities at December 31, 2003. As of December 31, 2003, the Company has met all of its delivery obligations under these contracts and expects to do so for the remainder of the contract terms.

The Company leases certain office space, manufacturing facilities and property under long-term operating leases expiring at various dates through March 2013. Total rent expense under these operating leases was approximately \$1.2 million for the year ended December 31, 2003, \$947,000 in 2002 and \$779,000 in 2001.

**AXT, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

The Company has an outstanding purchase order for manufacturing equipment related to its discontinued opto-electronics division totaling \$1.4 million at December 31, 2003. The Company is currently negotiating a settlement with the supplier for this un-needed equipment.

Total minimum lease payments under the above leases as of December 31, 2003, are summarized below (in thousands):

	<u>Operating Leases</u>
2004	\$ 1,231
2005	1,115
2006	836
2007	616
2008	617
Thereafter	3,236
	<u>\$ 7,651</u>



**AXT, Inc.**  
**EXHIBITS**  
**TO**  
**FORM 10-K ANNUAL REPORT**  
**For the Year Ended December 31, 2003**

Exhibit Number	Description
3.1(3)	Restated Certificate of Incorporation
3.2(4)	Certificate of Designation, Preferences and Rights of Series A Preferred Stock (which is incorporated herein by reference to Exhibit 2.1 to the registrant's form 8-K dated May 28, 1999).
3.3(5)	Second Amended and Restated By Laws
4.2(5)	Rights Agreement dated April 24, 2001 by and between AXT, Inc. and ComputerShare Trust Company, Inc.
10.1(1)	Form of Indemnification Agreement for directors and officers.*
10.2(1)	1993 Stock Option Plan and forms of agreements thereunder.*
10.3(1)	1997 Stock Option Plan and forms of agreements thereunder.*
10.4(1)	1997 Employee Stock Purchase Plan and forms of agreements thereunder.*
10.5(1)	1998 Employee Stock Purchase Plan and forms of agreements thereunder.*
10.7(2)	Purchase and Sale Agreement by and between Limar Realty Corp. #23 and AXT, Inc. dated April 1998.
10.10(3)	Bond Purchase Contract between Dain Rauscher Incorporated and AXT, Inc. dated December 1, 1998.
10.11(3)	Remarketing Agreement between Dain Rauscher Incorporated and AXT, Inc. dated December 1, 1998.
10.15(7)	Reimbursement Agreement between Wells Fargo Bank National Association and AXT, Inc. dated April 7, 2003.
10.16(8)	Asset purchase agreements dated September 4, 2003 by and between Dalian Luming Science and Technology Group, Ltd and AXT, Inc. and by and between Lumei Optoelectronics Corp., AXT, Inc., Lyte Optronics, Inc., Beijing Tongmei Xtal Technology and Xiamen Advanced Semiconductor Co., Ltd.

[Table of Contents](#)

<b>Exhibit Number</b>	<b>Description</b>
10.17	Code of Business Conduct and Ethics dated February 2, 2004.
21.1(1)	List of Subsidiaries.
24.1	Power of Attorney (see signature page).
31.1	Certification by Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification by Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification by Chief Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification by Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

- (1) Incorporated by reference to the exhibit as of the same number as filed with the SEC in our Registration Statement on Form S-1 on March 17, 1998.
- (2) Incorporated by reference to the exhibit as of the same number as filed with the SEC in our Registration Statement on Amendment No. 2 to Form S-1 on May 11, 1998.
- (3) Incorporated by reference to the exhibit as of the same number as filed with the SEC in our Annual Report on Form 10-K for the year ended December 31, 1998
- (4) Incorporated by reference to the exhibit as of the same number as filed with the SEC in our Form 8-K on June 14, 1999
- (5) Incorporated by reference to the exhibit as of the same number as filed with the SEC in our Form 8-K on May 30, 2001
- (6) Incorporated by reference to the exhibit as of the same number as filed with the SEC in our Form 10Q on November 12, 2002
- (7) Incorporated by reference to the exhibit as of the same number as filed with the SEC in our Form 10Q on May 9, 2003
- (8) Incorporated by reference to the exhibit as of the same number as filed with the SEC in our Form 10Q on November 13, 2003

\* Indicates a management contract

AXT, INC.  
CODE OF BUSINESS CONDUCT AND ETHICS

1. POLICY STATEMENT

We are committed to being a good corporate citizen and it is our policy to conduct our business affairs honestly and in an ethical manner. That goal cannot be achieved unless each of our employees individually accepts his or her responsibility to promote integrity and ethical conduct in all of his or her activities. Activities that may call into question AXT's reputation or integrity should be avoided. The provisions of this Code cannot anticipate every situation that may pose an ethical or moral issue, and AXT understands that not every situation is black and white. The key to compliance with the Code is exercising good judgment. This means following the spirit of this Code and the law, doing the "right" thing and acting ethically even when the law is not specific.

Supervisors set an example for other employees and are often responsible for directing the actions of others. Every supervisor is expected to take necessary actions to ensure compliance with this Code, to provide guidance and assist employees in resolving questions concerning the Code and to permit employees to express any concerns regarding compliance with this Code. No one has the authority to order another employee to act contrary to this Code.

The Code outlines the broad principles of legal and ethical business conduct under which we do business. The Code is intended to supplement, but not to replace, our Employee Handbook and any policies that we have established. Every person who works for AXT, its affiliates or subsidiaries, is expected to understand and comply with the provisions of this Code.

Violations of the Code of Business Conduct and Ethics, including failures to report potential violations by others, will be viewed as a disciplinary matter that may result in personnel action, including termination of employment. If you believe that a violation of this Code of Business Conduct and Ethics has occurred, please contact your supervisor, or the Chairman of our Nominating and Corporate Governance Committee of the Board of Directors at Chairman, Nominating and Corporate Governance Committee, c/o AXT, Inc., 4281 Technology Drive, Fremont, CA 94538. If you are concerned about maintaining anonymity, you may also send correspondence to the Chairman of our Audit Committee of the Board of Directors, in accordance with our Whistle-Blowing and Complaint Policy, at the following address: Chairman of the Audit Committee of the Board of Directors, c/o AXT, Inc., 4281 Technology Drive, Fremont, CA 94538.

2. COMPLIANCE WITH LAWS AND REGULATIONS

AXT is committed to full compliance with the laws and regulations of the cities, states and countries in which it operates. Numerous federal, state and local laws and regulations define and establish obligations with which AXT, its employees and agents must comply. Violation of governing laws and regulations may subject AXT to significant risk of fines, penalties and damaged reputation. All of our employees are expected to comply with applicable laws, rules and regulations when performing duties for AXT. Under certain circumstances, local country law may establish requirements that differ from this Code, and in such situations employees should comply with all local country laws. An employee or agent who violates laws or regulations in performing duties for AXT risks individual indictment, prosecution and penalties, and civil actions and penalties, and may subject AXT to the same risks and penalties. An employee who violates these laws or this Code may be subject to immediate disciplinary action, including possible termination of employment or affiliation with AXT.

3. FULL, FAIR, ACCURATE, TIMELY AND UNDERSTANDABLE DISCLOSURE

It is of critical importance to AXT that all disclosure in reports and documents that we file with the Securities and Exchange Commission be fair,

accurate, timely and understandable. You may be called upon to provide information to assist AXT in these responsibilities consistent with your role within AXT, and to assure that our public reports are complete, fair and understandable. We expect all of our employees to take this responsibility

1

seriously, and to provide prompt and accurate answers to all inquiries made to you in connection with the preparation of our public reports and disclosure.

#### 4. SPECIAL ETHICS OBLIGATIONS FOR EMPLOYEES WITH FINANCIAL REPORTING RESPONSIBILITIES

Our Chief Executive Officer, Chief Financial Officer, controller and other members of our Finance Department each bear a special responsibility for promoting integrity throughout AXT. Our Chief Executive Officer and Chief Financial Officer and other members of our Finance Department have a responsibility to foster a culture throughout AXT as a whole that ensures the fair and timely reporting of our financial results and condition. Because of this special role, our Chief Executive Officer, Chief Financial Officer, controller and other members of our Finance Department are bound by the following Financial Officer Code of Ethics, and by accepting the Code of Business Conduct and Ethics each agrees that he or she will:

- o Act with honesty and integrity, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships.
- o Comply with rules and regulations of federal, state, provincial and local governments, and other appropriate private and public regulatory agencies applicable to the performance of his or her duties to AXT.
- o Comply with our established accounting procedures, our system of internal controls and generally accepted accounting principles.
- o Provide information that is accurate, complete, objective, relevant, timely and understandable to ensure full, fair, accurate, timely and understandable disclosure in reports and documents that we file with, or submits to, governmental agencies and in other public communications made by us.
- o Respect the confidentiality of proprietary information acquired in the course of his or her work except when authorized or otherwise legally obligated to disclose. Proprietary information acquired in the course of one's work will not be used for personal advantage.

#### 5. CONFLICTS OF INTEREST AND CORPORATE OPPORTUNITIES

There are certain situations and activities that may create a conflict between your interests and those of AXT. You should avoid any relationship, influence or activity that would cause a conflict of interest, or appear to cause a conflict of interest, with your duties and responsibilities at AXT. This includes situations in which your personal, family or financial interests conflict or appear to conflict with those of AXT. You should not take for your own benefit opportunities discovered in the course of employment that you have reason to know would benefit AXT. Sometimes a conflict of interest will develop unexpectedly. If you feel that you have a conflict, actual or potential, you should report the details to your supervisor. Although not all actual or potential activity creating a conflict of interest is automatically prohibited, you should disclose all details of the conflict to your supervisor, and if possible obtain written approval from your supervisor before participating in any such activity.

Since it isn't always easy to spot potential conflicts of interests, set forth below are some examples of actual or potential conflicts, although it is not possible to list every possible potential conflict, and you are encouraged to consult with your supervisor before taking action if you are uncertain whether an activity may constitute a conflict of interest.

- o you, or a member of your family, receive improper personal benefits as a result of your position in AXT;
- o you use Company's property for your personal benefit;

2

- o you engage in activities that interfere with your loyalty to AXT or your ability to perform Company duties or responsibilities effectively;
- o you work simultaneously (whether as an employee or a consultant) for a competitor, customer or supplier;
- o you, or a member of your family, have a financial interest in a customer, supplier, or competitor which is significant enough to cause divided loyalty with AXT or the appearance of divided loyalty (the significance of a financial interest depends on many factors, such as size of investment in relation to your income, net worth and/or financial needs, your potential to influence decisions that could impact your interests, and the nature of the business or level of competition between AXT and the supplier, customer or competitor);
- o you, or a member of your family, acquire an interest in property (such as real estate, patent or other intellectual property rights or securities) in which you have reason to know AXT has, or might have, a legitimate interest;
- o you, or a member of your family, receive a loan or a guarantee of a loan from a customer, supplier or competitor (other than a loan from a financial institution made in the ordinary course of business and on an arm's-length basis);
- o you divulge or use AXT's confidential information - such as financial data, customer information, or computer programs - for your own personal or business purposes;
- o you make gifts or payments, or provide special favors, to customers, suppliers or competitors (or their immediate family members) with a value significant enough to cause the customer, supplier or competitor to make a purchase, or take or forego other action, which is beneficial to AXT and which the customer, supplier or competitor would not otherwise have taken; or
- o you are given the right to buy stock in other companies or you receive cash or other payments in return for promoting the services of an advisor, such as an investment banker, to AXT.

You should not give or receive valuable gifts, payments, special favors or other consideration to or from customers, suppliers or competitors beyond those extended in normal business, and you should not make payments or promises to influence someone else's acts or decisions. You must observe all government restrictions on gifts and entertainment, including the restrictions of the Foreign Corrupt Practices Act, which makes it illegal to offer payment, promise to pay, or authorize payment of any money, gifts, or things of value to any

foreign official, or any foreign political party, candidate or official, for the purpose of (i) influencing any act, or failure to act, in the official capacity of that foreign official or party; or (ii) inducing the foreign official or party to use influence to affect a decision of a foreign government or agency, in order to obtain or retain business for anyone, or direct business to anyone.

Although we encourage you to participate in industry and civic associations, you should be sensitive to possible conflicts with our business interests, if, for instance, the association takes a position adverse to our interests. As a general rule employees may not accept a position as an outside director of any current or likely competitor of AXT.

#### 6. REPORTING VIOLATIONS OF COMPANY POLICIES AND RECEIPT OF COMPLAINTS REGARDING FINANCIAL REPORTING OR ACCOUNTING ISSUES

If you become aware of conduct by an officer, director, employee or contract worker which you believe in good faith is a potential violation of this Code, you should notify your own or any other AXT supervisor, the Chief Executive Officer, or the Chief Financial Officer as soon as possible. You should also report any complaint or concern regarding AXT's accounting, internal accounting controls, or auditing matters, or any concerns regarding

3

questionable accounting or auditing matters. Supervisors are required to refer all reports of possible violations to the Chief Executive Officer, the Chief Financial Officer or the Chair of the Audit Committee.

All reports of complaints or concerns shall be recorded in a log, indicating the description of the matter reported, the date of the report and a brief summary of the disposition. The log shall be maintained by the Chief Financial Officer and shall be reviewed periodically with the Audit Committee. Allegations of violations of the Code should be made only in good faith and not to embarrass or put someone in a false light. If you become aware of a suspected or potential violation don't try to investigate or resolve it on your own. Prompt disclosure under this Code is vital to ensuring a timely and thorough investigation and resolution. You are expected to cooperate in internal or external investigations or alleged violations of the Code.

In response to every report made in good faith and subsequently determined to concern activity outside the Code, AXT will undertake an effective and thorough investigation, and if improper conduct is found, AXT will take appropriate disciplinary and remedial action. Compliance procedures are set forth in Appendix B to this Code. AXT will attempt to keep its discussions with any person reporting a violation confidential to the extent reasonably possible without compromising the effectiveness of the investigation. If you believe your report is not properly explained or resolved, you may take your concern or complaint to the Audit Committee of the Board of Directors.

It is our policy that there be no intentional retaliation against any person who provides truthful information to a Company or law enforcement official concerning a possible violation of any law, regulation or Company policy, including this Code. Persons who retaliate may be subject to civil, criminal and administrative penalties, as well as disciplinary action, up to and including termination of employment. In cases in which you report a suspected violation in good faith and are not engaged in the questionable conduct, we will attempt to keep our discussions with you confidential to the greatest extent possible. In the course of our investigation, we may find it necessary to share information with others on a "need to know" basis. No retaliation shall be taken against you for reporting alleged violations while acting in good faith.

#### 7. COMPLIANCE PROCEDURES

- o Compliance Officer. The Corporate Compliance Officer is the Chief Financial Officer. The Compliance Officer's

responsibility is to ensure communication, training, monitoring, and overall compliance with the Code. The Compliance Officer will, with the assistance and cooperation of AXT's officers, directors and Supervisors, foster an atmosphere where employees are comfortable in communicating and reporting concerns and possible Code violations.

- o Access to the Code. AXT shall ensure that employees, officers and directors may access the Code on AXT's website. In addition, each current employee will be provided with a copy of the Code. New employees will receive a copy of the Code as part of their new hire information. From time to time, AXT will sponsor employee training programs in which the Code and other Company policies and procedures will be discussed.
- o Monitoring. Supervisors are the "go to" persons for employee questions and concerns relating to the Code. Supervisors or supervisors will immediately report any violations or allegations of violations to the Compliance Officer. Supervisors will work with the Compliance Officer in assessing areas of concern, potential violations, any needs for enhancement of the Code or remedial actions to effect the Code's policies and overall compliance with the Code and other related policies.
- o Internal Investigation. When an alleged violation of the Code is reported, AXT shall take prompt and appropriate action in accordance with the law and regulations and otherwise consistent with good business practice. If the suspected violation appears to involve either a possible violation of law or an issue of significant corporate interest, or if the report involves a complaint or concern of any person, whether employee, a stockholder or other interested person regarding AXT's financial disclosure, internal accounting controls, questionable auditing or accounting matters or practices or other issues relating to AXT's accounting or auditing, then the manager or investigator should immediately notify the Compliance Officer, who, in turn, shall notify the Chair of the Audit Committee. If a suspected

violation involves any director or executive officer or if the suspected violation concerns any fraud, whether or not material, involving management or other employees who have a significant role in AXT's internal controls, any person who received such report should immediately report the alleged violation to the Compliance Officer and, in every such case, the Chair of the Audit Committee. The Compliance Officer or the Chair of the Audit Committee, as applicable, shall assess the situation and determine the appropriate course of action, including the conduct of an investigation, as appropriate.

- o Disciplinary Actions. Subject to the following sentence, the Compliance Officer, after consultation with the Manager of Human Resources, shall be responsible for implementing the appropriate disciplinary action in accordance with AXT's policies and procedures for any employee who is found to have violated the Code. If a violation has been reported to the Audit Committee or another committee of the Board, that Committee shall be responsible for determining appropriate disciplinary action. Any violation of applicable law or any deviation from the standards embodied in this Code will result in disciplinary action, up to and including termination of employment. In addition to imposing discipline upon employees

involved in non-compliant conduct, AXT also will impose discipline, as appropriate, upon an employee's supervisor, if any, who directs or approves such employees' improper actions, or is aware of those actions but does not act appropriately to correct them, and upon other individuals who fail to report known non-compliant conduct. In addition to imposing its own discipline, AXT will bring any violations of law to the attention of appropriate law enforcement personnel.

- o Retention of Reports and Complaints. All reports and complaints made to or received by the Compliance Officer or the Chair of the Audit Committee relating to violations of this Code shall be logged into a record maintained for this purpose by the Compliance Officer and this record of such report shall be retained for five years.
- o Required Government Reporting. Whenever conduct occurs that requires a report to the government, the Compliance Officer shall be responsible for complying with such reporting requirements.
- o Corrective Actions. Subject to the following sentence, in the event of a violation of the Code, the manager and the Compliance Officer should assess the situation to determine whether the violation demonstrates a problem that requires remedial action as to Company policies and procedures. If a violation has been reported to the Audit Committee or another committee of the Board, that committee shall be responsible for determining appropriate remedial or corrective actions. Such corrective action may include providing revised public disclosure, retraining Company employees, modifying Company policies and procedures, improving monitoring of compliance under existing procedures and other action necessary to detect similar non-compliant conduct and prevent it from occurring in the future. Such corrective action shall be documented, as appropriate.

#### 8. PUBLICATION OF THE CODE OF BUSINESS CONDUCT AND ETHICS; AMENDMENTS AND WAIVERS OF THE CODE OF BUSINESS CONDUCT AND ETHICS

The most current version of this Code will be posted and maintained on AXT's website. Any substantive amendment or waiver of this Code for executive officers or directors may be made only after approval by a committee comprised of a majority of AXT's independent directors and will be promptly disclosed to shareholders.

I, Morris S. Young, certify that:

1. I have reviewed this Form 10-K of AXT, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 29, 2004

/s/ MORRIS S. YOUNG  
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Morris S. Young  
Chief Executive Officer

I, Donald L. Tatzin, certify that:

1. I have reviewed this Form 10-K of AXT, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 29, 2004

/s/ DONALD L. TATZIN

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Donald L. Tatzin  
Chief Financial Officer

CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of AXT, Inc. (the "Company") on Form 10-K for the year ended December 31, 2003 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Morris S. Young, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 ("Section 906"), that, to the best of my knowledge:

(1) The Report fully complies with the requirements of section 13(a) of the Securities Exchange Act of 1934 (15 U.S.C. 78m); and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 29, 2004

/s/ Morris S. Young

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Morris S. Young

Chief Executive Officer

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to AXT, Inc. and will be retained by AXT, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of AXT, Inc. (the "Company") on Form 10-K for the year ended December 31, 2003 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Donald L. Tatzin, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 ("Section 906"), that, to the best of my knowledge:

(1) The Report fully complies with the requirements of section 13(a) of the Securities Exchange Act of 1934 (15 U.S.C. 78m); and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 29, 2004

/s/ Donald L. Tatzin  
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Donald L. Tatzin  
Chief Financial Officer

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to AXT, Inc. and will be retained by AXT, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.