

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-Q

(Mark
One)

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

For the quarterly period ended June 30, 2008

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 000-30941

AXCELIS TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

34-1818596
(IRS Employer Identification No.)

108 Cherry Hill Drive
Beverly, Massachusetts 01915
(Address of principal executive offices, including zip code)

(978) 787-4000
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No .

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act) Yes No

As of August 7, 2008 there were 103,037,066 shares of the registrant's common stock outstanding.

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.	3
Consolidated Statements of Operations for the three and six months ended June 30, 2008 and 2007	3
Consolidated Balance Sheets as of June 30, 2008 and December 31, 2007	4
Consolidated Statements of Cash Flows for the six months ended June 30, 2008 and 2007	5
Notes to Consolidated Financial Statements	6
Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.	13
Overview	13
Critical Accounting Estimates	14
Results of Operations	15
Liquidity and Capital Resources	19
Outlook	20
Item 3. Quantitative and Qualitative Disclosures About Market Risk.	21
Item 4. Controls and Procedures.	21
PART II—OTHER INFORMATION	
Item 1. Legal Proceedings.	22
Item 1A. Risk Factors.	22
Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.	22
Item 3. Defaults Upon Senior Securities.	22
Item 4. Submission of Matters to a Vote of Security Holders.	22
Item 5. Other Information.	23
Item 6. Exhibits.	23
SIGNATURES	24

Item 1. Financial Statements.

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

	Three months ended		Six months ended	
	June 30,		June 30,	
	2008	2007	2008	2007
Revenue				
Product	\$ 61,268	\$ 94,773	\$ 131,052	\$ 175,499
Service	14,205	13,859	28,198	28,600
Royalties, primarily from SEN	1,416	1,441	2,533	3,500
	<u>76,889</u>	<u>110,073</u>	<u>161,783</u>	<u>207,599</u>
Cost of revenue				
Product	42,159	58,354	90,147	106,055
Service	7,640	8,129	15,330	16,704
	<u>49,799</u>	<u>66,483</u>	<u>105,477</u>	<u>122,759</u>
Gross profit	27,090	43,590	56,306	84,840
Operating expenses				
Research and development	16,954	17,598	33,807	35,826
Sales and marketing	12,475	13,146	24,380	26,084
General and administrative	10,878	10,194	20,692	20,670
Amortization of intangible assets	656	656	1,312	1,312
Restructuring charges	3,017	—	3,068	—
	<u>43,980</u>	<u>41,594</u>	<u>83,259</u>	<u>83,892</u>
Income (loss) from operations	(16,890)	1,996	(26,953)	948
Other income (expense)				
Equity income (loss) of SEN	(133)	1,905	(132)	6,573
Interest income	391	1,146	1,081	2,600
Interest expense	(1,680)	(1,566)	(3,281)	(3,235)
Other—net	(767)	275	(449)	251
	<u>(2,189)</u>	<u>1,760</u>	<u>(2,781)</u>	<u>6,189</u>
Income (loss) before income taxes	(19,079)	3,756	(29,734)	7,137
Income taxes (credits)	318	(988)	744	(280)
Net income (loss)	<u>\$ (19,397)</u>	<u>\$ 4,744</u>	<u>\$ (30,478)</u>	<u>\$ 7,417</u>
Net income (loss) per share				
Basic	\$ (0.19)	\$ 0.05	\$ (0.30)	\$ 0.07
Diluted	(0.19)	0.05	(0.30)	0.07
Shares used in computing basic and diluted income (loss) per share				
Basic	102,450	101,609	102,449	101,551
Diluted	102,450	102,503	102,449	102,463

See accompanying Notes to Consolidated Financial Statements

Axcelis Technologies, Inc.
Consolidated Balance Sheets
(In thousands)
(Unaudited)

	June 30, 2008	December 31, 2007
ASSETS		
Current assets		
Cash and cash equivalents	\$ 59,651	\$ 83,877
Restricted cash	14,821	17,018
Accounts receivable, net	51,233	76,067
Inventories, net	178,855	169,278
Prepaid expenses and other current assets	17,551	32,442
Total current assets	<u>322,111</u>	<u>378,682</u>
Property, plant and equipment, net	66,352	68,101
Investment in SEN	140,044	132,911
Goodwill	42,115	42,115
Intangible assets	9,613	10,925
Other assets	35,313	37,195
	<u>\$615,548</u>	<u>\$669,929</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 15,636	\$ 27,054
Accrued compensation	16,426	17,003
Warranty	3,931	5,011
Income taxes	757	531
Deferred revenue	14,518	35,827
Other current liabilities	6,579	8,577
Current portion of convertible subordinated debt	81,534	—
Total current liabilities	<u>139,381</u>	<u>94,003</u>
Convertible subordinated debt	—	79,923
Long-term deferred revenue	3,291	4,704
Other long-term liabilities	5,290	5,293
Stockholders' equity		
Preferred stock	—	—
Common stock	103	103
Additional paid-in capital	481,596	478,726
Treasury stock	(1,218)	(1,218)
Accumulated deficit	(32,293)	(1,815)
Accumulated other comprehensive income	19,398	10,210
	<u>467,586</u>	<u>486,006</u>
	<u>\$615,548</u>	<u>\$669,929</u>

See accompanying Notes to Consolidated Financial Statements

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

	Six months ended	
	2008	June 30, 2007
Operating activities		
Net income (loss)	\$ (30,478)	\$ 7,417
Adjustments required to reconcile net income to net cash used for operating activities		
Depreciation and amortization	10,107	9,169
Amortization of intangible assets	1,312	1,312
Accretion of premium on convertible subordinated debt	1,611	1,488
Stock-based compensation expense	2,166	2,430
Undistributed (income) loss of SEN	132	(6,573)
Changes in operating assets and liabilities		
Accounts receivable	25,609	(5,723)
Inventories	(7,162)	(14,883)
Other current assets	15,424	(9,762)
Accounts payable and other current liabilities	(15,596)	(27,646)
Deferred revenue	(22,723)	9,682
Income taxes	218	(786)
Cash dividend from SEN	—	5,677
Other assets and liabilities	(4,193)	(11,263)
Net cash used for operating activities	(23,573)	(39,461)
Investing activities		
Sales and maturities of marketable securities	—	45,200
Expenditures for property, plant and equipment	(2,289)	(6,243)
Decrease (increase) in restricted cash	3,354	(3,012)
Net cash provided by investing activities	1,065	35,945
Financing activities		
Repayment of convertible subordinated debt	—	(74,217)
Proceeds from the exercise of stock options	86	956
Proceeds from employee stock purchase plan	771	996
Net cash (used for) provided by financing activities	857	(72,265)
Effect of exchange rate changes on cash	(2,575)	(888)
Net decrease in cash and cash equivalents	(24,226)	(76,669)
Cash and cash equivalents at beginning of period	83,877	140,451
Cash and cash equivalents at end of period	\$ 59,651	\$ 63,782

See accompanying Notes to Consolidated Financial Statements

Axcelis Technologies, Inc.
Notes To Consolidated Financial Statements (Unaudited)
(All tabular amounts in thousands, except per share amounts)

Note 1. Nature of Business and Basis of Presentation

Axcelis Technologies, Inc. ("Axcelis" or the "Company"), is a worldwide producer of ion implantation, dry strip and other processing equipment used in the fabrication of semiconductor chips in the United States, Europe and Asia. In addition, the Company provides extensive aftermarket service and support, including spare parts, equipment upgrades, and maintenance services to the semiconductor industry. The Company owns 50% of the equity of a joint venture with Sumitomo Heavy Industries, Ltd. in Japan. This joint venture, which is known as SEN Corporation, an SHI and Axcelis Company ("SEN"), licenses technology from the Company relating to the manufacture of specified ion implantation products and has exclusive rights to manufacture and sell these products in the territory of Japan. SEN is the leading producer of ion implantation equipment in Japan.

During the first half of 2008, the Company experienced negative cash flows from operations and as of June 30, 2008, the Company had approximately \$59.7 million of cash and cash equivalents. Furthermore, as of June 30, 2008, the Company's New Notes (see Note 8), due January 15, 2009, are classified as current liabilities.

The Company anticipates continued cash outflows in the third quarter of 2008, and believes it will need to preserve existing cash and cash equivalents to support operations. The Company expects that existing cash and cash equivalents and expected cash flow for the remainder of 2008, based primarily on current expectations of customer ordering patterns, will be sufficient to satisfy the Company's anticipated cash requirements for the remainder of 2008. However, the Company believes it will need to secure new financing to repay the New Notes in January 2009, and is exploring various financing alternatives. The amount and timing of the Company's financing needs depends on the accuracy of our assumptions about levels of sales and expenses, and a number of other factors described in "Risk Factors," in the Company's Form 10-K for the year ended December 31, 2007. In addition, should the Company continue to experience losses and negative cash flows from operations, long-lived assets may become subject to impairment in future periods.

On April 23, 2008, the Company entered into a revolving credit facility with a bank that provides for borrowings up to the lesser of (A) \$50 million or (B) specified percentages of the amounts of qualifying accounts receivable and inventory (approximately \$29 million at June 30, 2008). Presently, the Company's 2008 forecast does not anticipate drawing down on the facility because the Company is not currently, and does not expect to become, in compliance with the financial covenants that, among other things, limit the amounts of net loss the Company can incur in the second and third quarters of 2008 and specify that the Company must report net income in the fourth quarter of 2008 and thereafter.

Currently, the Company is seeking to address its financing requirements through a combination of a sale-leaseback of the Company's headquarters and manufacturing facility located in Beverly, Massachusetts, and a secured loan facility with one or more lenders, which may include the bank which provided the existing facility, the holder of the New Notes or new lenders. The terms of these financing transactions will depend on market conditions and the Company's performance and financial condition. The Company expects that the terms of any new debt financing will be less attractive than the terms of the New Notes. There can be no assurance that any financing transaction will be completed. Should the Company not be able to obtain financing with acceptable terms and/or current estimates for anticipated cash flow in 2008 prove incorrect, the Company's management may seek alternative strategies intended to improve the Company's cash position. These strategies could include initiating further efforts to restructure the business and reduce the revenue breakeven level and equity financings that could be dilutive to the existing holders of our common stock.

The accompanying unaudited consolidated financial statements have been prepared in accordance with generally accepted accounting principles for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management all adjustments, which are of a normal recurring nature, considered necessary for a fair presentation have been included. Operating results for the interim periods presented are not necessarily indicative of the results that may be expected for other interim periods or for the year as a whole.

The balance sheet at December 31, 2007 has been derived from the audited financial statements at that date but does not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. For further information, refer to the consolidated financial statements and footnotes thereto included in Axcelis Technologies, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2007.

Note 2. Stock-Based Compensation

The Company maintains the Axcelis Technologies, Inc. 2000 Stock Plan (the "2000 Plan"), a stock award and incentive plan which permits the issuance of options, restricted stock, restricted stock units and performance awards to selected employees, directors and consultants of the Company. The Company also maintains the Axcelis Technologies, Inc. Employee Stock Purchase Plan (the "ESPP"), an Internal Revenue Code Section 423 plan. The 2000 Plan and the ESPP are more fully described in Note 15 to the consolidated financial statements in our 2007 Annual Report on Form 10-K.

Under SFAS No. 123R, the Company recognized stock-based compensation expense of \$1.2 million and \$2.2 million for the three and six months ended June 30, 2008, respectively. For the three and six months ended June 30, 2007, the Company recognized stock-based compensation expense of \$1.3 million and \$2.4 million, respectively. These amounts include the impact of recognizing compensation expense related to restricted stock units, restricted stock, non-qualified stock options and stock offered under the ESPP.

Note 3. Net Income Per Share

SFAS No. 128, "Earnings Per Share," requires two presentations of earnings per share, "basic" and "diluted." Basic earnings per share is computed by dividing income available to common stockholders (the numerator) by the weighted-average number of common shares outstanding (the denominator) for the period. The computation of diluted earnings per share is similar to basic earnings per share, except that the denominator is increased to include the number of additional common shares that would have been outstanding if the potentially dilutive common shares had been issued.

For purposes of computing diluted earnings per share, weighted average common shares outstanding do not include stock options and restricted stock awards with an exercise price inclusive of unrecognized compensation expense which exceeded the average fair market value of the Company's common stock for the period, as the effect would be anti-dilutive. The Company has excluded 0.4 and 0.2 million incremental shares attributable to restricted stock, restricted stock units and outstanding stock options for the three and six months ended June 30, 2008, respectively, as their effect would be anti-dilutive. In addition, 4.1 million shares of common stock for the assumed conversion of the Company's convertible debt for the three and six months ended June 30, 2008 and 3.9 million shares of common stock for the assumed conversion of the Company's convertible debt for the three and six months ended June 30, 2007, computed using the if converted method, were excluded from the computation of diluted earnings per share as the effect of conversion would be anti-dilutive. These stock options and restricted stock awards and the convertible debt could, however, become dilutive in future periods.

A reconciliation of net income and shares used in computing basic and diluted earnings per share follows:

	Three months ended June 30,		Six months ended June 30,	
	2008	2007	2008	2007
Income available to common stockholders	\$ (19,397)	\$ 4,744	\$ (30,478)	\$ 7,417
Weighted average common shares outstanding used in computing basic net income per share	102,450	101,609	102,449	101,551
Incremental shares	—	894	—	912
Weighted average common shares outstanding used in computing diluted net income per share	102,450	102,503	102,449	102,463
Net income per share				
Basic	\$ (0.19)	\$ 0.05	\$ (0.30)	\$ 0.07
Diluted	(0.19)	0.05	(0.30)	0.07

Note 4. Comprehensive Income

The components of comprehensive income follow:

	Three months ended June 30,		Six months ended June 30,	
	2008	2007	2008	2007
Net income (loss)	\$ (19,397)	\$ 4,744	\$ (30,478)	\$ 7,417
Other comprehensive income (loss):				
Foreign currency translation adjustments	(9,128)	(4,953)	9,188	(3,828)
Unrealized gain on marketable securities	—	2	—	4
Comprehensive income (loss)	\$ (28,525)	\$ (207)	\$ (21,290)	\$ 3,593

Note 5. Inventories

The components of inventories follow:

	June 30, 2008	December 31, 2007
Raw materials	\$ 98,458	\$ 95,289
Work-in-process	47,650	41,018
Finished goods (completed systems)	32,747	32,971
	<u>\$178,855</u>	<u>\$169,278</u>

Approximately \$83.2 million and \$75.9 million of inventory at June 30, 2008 and December 31, 2007, respectively, relates to the Optima product family.

Note 6. Restructuring Charges

In May 2008, the Company implemented a reduction in force related to planned actions taken by management to control costs to provide future profitability and conserve cash. This reduction in force is expected to result in a total charge to expense of approximately \$3.7 million related to separation and outplacement costs, of which \$3.0 million was recorded in the quarter ended June 30, 2008. The remaining \$0.7 million will be recorded in the remainder of 2008. A total of \$1.9 million has been paid

through June 30, 2008. Substantially all payments related to these actions are expected to be completed in 2008.

In October 2007, the Company implemented a reduction in force as part of management's efforts to control costs. This reduction in force resulted in a total charge to expense of approximately \$2.6 million related to separation and outplacement costs, of which \$2.5 million was recorded in 2007 and \$0.1 million was recorded in the period ended March 31, 2008. A total of \$2.3 million has been paid through June 30, 2008. Substantially all payments related to these actions are expected to be completed in 2008.

Changes in the Company's restructuring liability, which consists primarily of severance and related costs, included in amounts reported as other current liabilities, follows:

Balance at December 31, 2007	\$ 916
Restructuring expense	3,068
Cash payments	(2,653)
Balance at June 30, 2008	<u>\$ 1,331</u>

Note 7. Product Warranty

The Company offers a one to three year warranty for all of its products, the terms and conditions of which vary depending upon the product sold. For all systems sold, the Company accrues a liability for the estimated cost of standard warranty at the time of system shipment and defers the portion of systems revenue attributable to the fair value of non-standard warranty. Revenue for non-standard warranty is recognized ratably over the applicable warranty period. Costs for non-standard warranty are expensed as incurred. Factors that affect the Company's warranty liability include the number of installed units, historical and anticipated product failure rates, material usage and service labor costs. The Company periodically assesses the adequacy of its recorded liability and adjusts the amount as necessary.

Changes in the Company's product warranty liability are as follows:

	Six months ended	
	June 30,	
	2008	2007
Balance at December 31	\$ 6,245	\$ 6,472
Warranties issued during the period	1,774	3,484
Settlements made during the period	(3,088)	(3,006)
Changes in liability for pre-existing warranties during the period	(234)	(295)
Balance at June 30	<u>\$ 4,697</u>	<u>\$ 6,655</u>
Amount classified as current	\$ 3,931	\$ 5,567
Amount classified as long-term	766	1,088
Balance at June 30	<u>\$ 4,697</u>	<u>\$ 6,655</u>

Note 8. Convertible Subordinated Debt

In January 2002, the Company completed an offering of \$125 million of 4.25% Convertible Subordinated Notes due January 15, 2007 (the "Old Notes").

On May 2, 2006, the Company entered into an exchange and purchase agreement pursuant to which the holder of an aggregate of approximately \$50.8 million of the Old Notes agreed to exchange

its Old Notes for \$50.8 million in aggregate principal amount of the Company's newly issued 4.25% Convertible Senior Subordinated Notes due January 15, 2009 (the "New Notes"), plus accrued and unpaid interest on the Old Notes through but excluding May 2, 2006, the closing date of the exchange. In addition, the Company issued an additional \$24.2 million of New Notes, resulting in an aggregate of \$75 million of New Notes outstanding.

The New Notes are unsecured senior indebtedness of the Company and bear interest at the rate of 4.25% per annum. Interest is payable on January 15 and July 15 of each year, commencing July 15, 2006. The New Notes mature on January 15, 2009. At maturity, the Company is required to repay the outstanding principal of the New Notes, plus a maturity premium of 11.125% of such principal, resulting in an effective annual yield to maturity of approximately 8.0%. Maturity of the New Notes accelerates upon a change in control, as defined. Acceleration of maturity would result in a premium increasing the effective annual yield to 10%.

The principal amount of the New Notes, together with the accreted portion of the maturity premium, which increases over the term of the notes, as of the conversion date, are convertible at the option of the holder, at any time on or prior to maturity, into shares of the Company's common stock at a conversion price equal to \$20.00 per share, which also was the conversion price of the Old Notes, subject to adjustment in certain circumstances. In addition, debt issuance costs of approximately \$0.2 million related to the New Notes are being amortized to interest expense over the term of the New Notes.

On January 15, 2007, the Company paid \$74.2 million to redeem the remaining Old Notes.

See Note 1 for discussion of liquidity and financing alternatives.

Note 9. Cash Equivalents

Effective January 1, 2008, certain cash equivalents carried by the Company are subject to the provisions of SFAS 157, *Fair Value Measurement*. Under SFAS 157, the Company is required to measure the fair value of its financial assets using a three-tier fair value hierarchy. Based on this hierarchy, the Company determined the fair value of its money market funds using quoted market prices, a Level 1 observable input as defined under SFAS 157. As of June 30, 2008, the Company's cash equivalents consisted entirely of money market funds with a fair value of approximately \$42.9 million.

Note 10. Income Taxes

Income tax expense relates principally to operating results of foreign entities in jurisdictions, primarily in Asia, where the company earns taxable income. The Company has significant net operating losses in the United States and certain foreign tax jurisdictions and, as a result, does not pay significant income taxes in those jurisdictions. Accordingly, our effective income tax rate is not meaningful.

Note 11. Significant Customers

In the three months ended June 30, 2008, no single customer accounted for more than 10% of revenue. In the six months ended June 30, 2008, one customer accounted for approximately 16% of revenue. In the three months ended June 30, 2007, two customers accounted for approximately 13% and 10% of revenue, respectively. In the six months ended June 30, 2007, two customers each accounted for approximately 14% of revenue.

Note 12. Contingencies

Litigation

The Company is not presently a party to any litigation that it believes might have a material adverse effect on its business operations. The Company is, from time to time, a party to litigation that arises in the normal course of its business operations.

Indemnifications

The Company's system sales agreements typically include provisions under which the Company agrees to take certain actions, provide certain remedies and defend its customers against third-party claims of intellectual property infringement under specified conditions and to indemnify customers against any damage and costs awarded in connection with such claims. The Company has not incurred any material costs as a result of such indemnifications and has not accrued any liabilities related to such obligations in the accompanying consolidated financial statements.

Note 13. Recent Accounting Pronouncements

In September 2006, the Financial Accounting Standards Board (FASB) issued SFAS No. 157, *Fair Value Measurement*. SFAS No. 157 defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles and establishes a hierarchy that categorizes and prioritizes the sources to be used to estimate fair value. SFAS No. 157 also expands financial statement disclosures about fair value measurements. On February 6, 2008, the FASB issued FASB Staff Position (FSP) 157-b, which delayed the effective date of SFAS No. 157 for one year for all nonfinancial assets and nonfinancial liabilities, except those that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually). SFAS No. 157 and FSP 157-b are effective for financial statements issued for fiscal years beginning after November 15, 2007. We have elected a partial deferral of SFAS No. 157 under the provisions of FSP 157-b related to the measurement of fair value used when evaluating goodwill, other intangible assets and other long-lived assets for impairment and valuing asset retirement obligations and liabilities for exit or disposal activities. The impact of partially adopting SFAS No. 157 effective January 1, 2008 was not material to our consolidated financial statements.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities—Including an Amendment of SFAS 115*, which permits but does not require us to measure financial instruments and certain other items at fair value. Unrealized gains and losses on items for which the fair value option has been elected are reported in earnings. This statement is effective for financial statements issued for fiscal years beginning after November 15, 2007. As we have not elected to fair value any of our financial instruments under the provisions of SFAS No. 159, the adoption of this statement has not had any impact to our consolidated financial statements.

In December 2007, the FASB issued SFAS No. 141(R) *Business Combinations*. This statement applies to all transactions or other events in which an entity (the acquirer) obtains control of one or more businesses (the acquiree), including those sometimes referred to as "true mergers" or "mergers of equals" and combinations achieved without the transfer of consideration, for example, by contract alone or through the lapse of minority veto rights. This statement applies to all business entities, including mutual entities that previously used the pooling-of-interests method of accounting for some business combinations. It does not apply to 1) the formation of a joint venture; 2) the acquisition of an asset or a group of assets that does not constitute a business; 3) a combination between entities or businesses under common control; 4) a combination between not-for-profit organizations or the acquisition of a for-profit business by a not-for-profit organization. This statement applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008. An entity may not apply it before that date.

The effective date of this statement is the same as that of the related SFAS No. 160, *Noncontrolling Interests in Consolidated Financial Statements*. The adoption of SFAS No. 141(R) is not expected to have a material impact on the Company's financial position, results of operations or liquidity.

In December 2007, the FASB issued SFAS No. 160, *Noncontrolling Interests in Consolidated Financial Statements, an Amendment to ARB No. 51*. This statement applies to all entities that prepare consolidated financial statements, except not-for-profit organizations, but will affect only those entities that have an outstanding noncontrolling interest in one or more subsidiaries or that deconsolidate a subsidiary. This statement is effective for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2008 (that is, January 1, 2009, for entities with calendar year-ends). Earlier adoption is prohibited. The effective date of this statement is the same as that of the related SFAS No. 141(R). The adoption of SFAS No. 160 is not expected to have a material impact on the Company's financial position, results of operations or liquidity.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Certain statements in "Management's Discussion and Analysis of Financial Condition and Results of Operations" are forward-looking statements that involve risks and uncertainties. Words such as may, will, should, would, anticipates, expects, intends, plans, believes, seeks, estimates and similar expressions identify such forward-looking statements. The forward-looking statements contained herein are based on current expectations and entail various risks and uncertainties that could cause actual results to differ materially from those expressed in such forward-looking statements. Factors that might cause such a difference include, among other things, those set forth under or referred to in "Liquidity and Capital Resources" and "Risk Factors" and those appearing elsewhere in this Form 10-Q. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect management's analysis only as of the date hereof. We assume no obligation to update these forward-looking statements to reflect actual results or changes in factors or assumptions affecting forward-looking statements.

Overview

Axcelis Technologies, Inc. ("Axcelis," "we," "us," or "our"), is a producer of ion implantation and dry strip equipment used in the fabrication of semiconductors in the United States, Europe and Asia. In addition, we provide extensive aftermarket service and support, including spare parts, equipment upgrades, and maintenance services. We own 50% of the equity of a joint venture known as SEN Corporation, an SHI and Axcelis Company, or "SEN," with Sumitomo Heavy Industries, Ltd. ("SHI") in Japan. SEN licenses technology from us relating to the manufacture of specified ion implantation products and has exclusive rights to manufacture and sell these products in the territory of Japan. SEN is the leading producer of ion implantation equipment in Japan.

The semiconductor capital equipment industry is subject to significant cyclical swings in capital spending by semiconductor manufacturers. Capital spending is influenced by demand for semiconductors and the products using them, the utilization rate and capacity of existing semiconductor manufacturing facilities and changes in semiconductor technology, all of which are outside of our control. As a result, our revenues and gross margins, to the extent affected by increases or decreases in volume, could fluctuate from year to year and period to period. The industry experienced a downturn beginning in the second half of 2007, which continued into 2008. Our gross margins are also affected by the introduction of new products. We typically become more efficient in manufacturing products as they mature. Our operating expense base is largely fixed and does not vary significantly with changes in volume. Therefore, we could experience fluctuations in operating results and cash flows depending on our revenues as driven by the level of capital expenditures by semiconductor manufacturers.

The sizable expense of building, upgrading or expanding a semiconductor fabrication facility is increasingly causing semiconductor companies to contract with foundries to manufacture their semiconductors. In addition, consolidation and partnering within the semiconductor manufacturing industry is increasing. We expect these trends to continue to reduce the number of our potential customers. This growing concentration of Axcelis' customers may increase competitive pricing as higher percentages of our total revenues are tied to the buying decisions of a particular customer or a small number of customers.

Beginning in 2004, most customers shifted from multi wafer tools to single wafer tools for high current ion implant applications. Because we did not have a single wafer high current product, we have experienced a significant loss of market share which we have yet to regain. We introduced our single wafer Optima HD (for high current applications) product in 2006 and have begun to gain traction with this tool at a number of customers through evaluation arrangements. During the six months ended June 30, 2008, we recognized approximately \$15.1 million to revenue on sales of the Optima HD.

Our single wafer tool for high energy ion implant applications, the Optima XE, was released in the fourth quarter of 2007. We shipped the first Optima XE in May 2008. We expect the Optima XE to allow us to maintain a leading market share in high energy applications moving forward.

As of June 30, 2008, total amounts included in inventory, evaluation tools (classified as a component of inventory on the balance sheet) and other assets related to our investment in the Optima product line were approximately \$110.9 million.

Operating results for the current periods presented are not necessarily indicative of the results that may be expected for subsequent interim periods or for the year as a whole.

Critical Accounting Estimates

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

The critical accounting estimates are those that we believe are the more significant judgments and estimates used in the preparation of our condensed consolidated financial statements. As of June 30, 2008 there have been no material changes to the critical accounting estimates as described in our Management's Discussion and Analysis of Financial Condition and Results of Operations and in the Notes to the consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2007.

Results of Operations

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

	Three months ended June 30,		Six months ended June 30,	
	2008	2007	2008	2007
Revenue				
Product	79.7%	86.1%	81.0%	84.5%
Services	18.5	12.6	17.4	13.8
Royalties, primarily from SEN	1.8	1.3	1.6	1.7
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Cost of revenue				
Product	54.8	53.0	55.7	51.1
Service	9.9	7.4	9.5	8.0
	<u>64.8</u>	<u>60.4</u>	<u>65.2</u>	<u>59.1</u>
Gross profit	35.2	39.6	34.8	40.9
Other costs and expenses				
Research and development	22.0	16.0	20.9	17.3
Sales and marketing	16.2	11.9	15.1	12.6
General and administrative	14.1	9.3	12.8	10.0
Amortization of intangible assets	0.9	0.6	0.8	0.6
Restructuring charges	3.9	—	1.9	—
	<u>57.2</u>	<u>37.8</u>	<u>51.5</u>	<u>40.5</u>
Income (loss) from operations	(22.0)	1.8	(16.7)	0.5
Other income (expense)				
Equity income (loss) of SEN	(0.2)	1.7	(0.1)	3.2
Interest income	0.5	1.0	0.7	1.3
Interest expense	(2.2)	(1.4)	(2.0)	(1.6)
Other-net	(1.0)	0.3	(0.3)	0.1
	<u>(2.8)</u>	<u>1.6</u>	<u>(1.7)</u>	<u>3.0</u>
Income (loss) before income taxes	(24.8)	3.4	(18.4)	3.5
Income taxes (credits)	0.4	(0.9)	0.5	(0.1)
Net income (loss)	<u>(25.2)%</u>	<u>4.3%</u>	<u>(18.8)%</u>	<u>3.6%</u>

Three and six months ended June 30, 2008 in comparison to the three and six months ended June 30, 2007

Revenue

Product

Product revenue, which includes systems sales, sales of spare parts and product upgrades was \$61.3 million, or 79.7% of revenue for the three months ended June 30, 2008, compared with \$94.8 million, or 86.1% of revenue for the three months ended June 30, 2007. Product revenue was \$131.1 million, or 81.0% of revenue for the six months ended June 30, 2008, compared with \$175.5 million, or 84.5% of revenue for the six months ended June 30, 2007. Product revenue levels in 2007 and 2008 have been impacted by the Company's loss of high current market share. The decline in product revenue in both the three and six month periods ended June 30, 2008 is attributable to a weakening semiconductor market and a related decrease in capital spending by semiconductor manufacturers.

A portion of the Company's revenue from system sales is deferred until installation and other services related to future deliverables are performed. The total amount of deferred revenue at June 30, 2008 and 2007 was \$17.8 million and \$43.5 million, respectively.

Service

Service revenue, which includes the labor component of maintenance and service contracts and service hours provided by on-site service personnel, was \$14.2 million, or 18.5% of revenue for the three months ended June 30, 2008, compared with \$13.9 million, or 12.6% of revenue, for the three months ended June 30, 2007. Service revenue was \$28.2 million, or 17.4% of revenue for the six months ended June 30, 2008, compared with \$28.6 million, or 13.8% of revenue, for the six months ended June 30, 2007. Although service revenue generally increases with the expansion of the installed base of systems, it can fluctuate period to period based on capacity utilization at customers' manufacturing facilities, which affects the need for equipment service.

Ion Implant

The largest portion of the Company's product and service revenues are derived from ion implantation products and services, which typically average from 70% to 80% of total revenues. During the three months ended June 30, 2008, revenue from sales of ion implantation products and service accounted for \$63.9 million, or 83.1% of total revenue, compared with \$78.0 million, or 70.9%, of total revenue in the three months ended June 30, 2007. Revenue from sales of ion implantation products and service accounted for \$133.8 million, or 82.7% of revenue in the six months ended June 30, 2008, compared with \$152.1 million, or 73.2% of revenue in the six months ended June 30, 2007. The remainder of the Company's revenue derives from the sale of products and services relating to dry strip and other processing equipment.

Aftermarket

The Company's product revenues include sales of spare parts and product upgrades as well as complete systems. We refer to the business of selling spare parts and product upgrades, combined with the sale of maintenance labor and service contracts and service hours as the "aftermarket" business. The revenue from our aftermarket business was \$38.3 million for the three month period ended June 30, 2008, compared to \$41.3 million for the corresponding period of the preceding year. The revenue from our aftermarket business was \$78.9 million for the six month period ended June 30, 2008, compared to \$85.7 million for six month period ended June 30, 2007. Aftermarket revenue generally increases with expansion of the installed base of systems but can fluctuate period to period based on

capacity utilization at customers' manufacturing facilities which affects the sale of spare parts and demand for equipment service.

Royalties

Royalty revenue was \$1.4 million, or 1.8% of revenue for the three months ended June 30, 2008, compared with \$1.4 million, or 1.3% of revenue for the three months ended June 30, 2007. Royalty revenue for the six months ended June 30, 2008 was \$2.5 million, or 1.6% of revenue, compared to \$3.5 million, or 1.7% of revenue for the six months ended June 30, 2007. Royalties are primarily earned under the terms of our license agreement with SEN. Revenue changes are mainly attributable to fluctuations in SEN sales volume based on demand for equipment by Japanese semiconductor manufacturers and the timing of shipments in Japan.

Gross Profit

Product

Gross profit from product revenue was 31.2% for the three months ended June 30, 2008, compared to 38.4% for the three months ended June 30, 2007. The decrease in gross profit from product revenues is attributable to lower margins on new product revenue recognized in the quarter combined with the unfavorable impact of operating overheads on lower volumes (approximately 15.0%), partially offset by the favorable impact of an increased mix of parts and upgrade revenue at higher margins (approximately 7.8%). Revenue recognized on new products generally carries lower margins than mature products due to higher initial material costs and labor inefficiencies. Gross profit from product revenue was 31.2% for the six months ended June 30, 2008, compared with 39.6% in the six months ended June 30, 2007. The decrease in gross profit from product revenues is attributable to lower margins on new product revenue recognized (approximately 11.7%), partially offset by the favorable impact of an increased mix of parts and upgrade revenue at higher margins (approximately 3.3%).

Service

Gross profit from service revenue was 46.2% for the three months ended June 30, 2008, compared to 41.3% for the three months ended June 30, 2007. Gross profit from service revenue was 45.6% for the six months ended June 30, 2008, compared to 41.6% for the six months ended June 30, 2007. The increase in gross profit for both the three and six month periods ended June 30, 2008, is attributable a higher mix of profitable service support agreements and lower expenses against fixed price support contracts.

Research and Development

Research and development expense was \$17.0 million in the three months ended June 30, 2008, a decrease of \$0.6 million, or 3.4%, compared with \$17.6 million in the three months ended June 30, 2007. The decrease was driven primarily by decreased professional fee expenses (\$0.9 million) and decreased payroll costs (\$0.6 million) partially offset by increased development material costs (\$0.7 million) and development asset amortization and depreciation costs (\$0.2 million). Research and development expense was \$33.8 million in the six months ended June 30, 2008, a decrease of \$2.0 million, or 5.6%, compared with \$35.8 million in the six months ended June 30, 2007. The decrease was driven primarily by decreased professional fee expenses (\$2.0 million) and decreased payroll costs (\$1.4 million) partially offset by increased development material costs (\$0.9 million) and development asset amortization and depreciation costs (\$0.7 million). We expect research and development spending to decline slightly throughout 2008 as development costs for new products drop off and are replaced by a lower level of spending for continuous improvement.

Research and development expense was attributable to the following activities through the second quarter of 2008: 47% for new product development, 35% for improvement of existing products, and 18% for product testing.

Sales and Marketing

Sales and Marketing expense was \$12.5 million in the three months ended June 30, 2008, a decrease of \$0.6 million, or 4.6%, compared with \$13.1 million in the three months ended June 30, 2007. The decrease was driven primarily by decreased separation costs (\$0.5 million), decreased travel costs (\$0.2 million) and decreased marketing costs (\$0.2 million), partially offset by increased costs related to evaluation system support for our Optima platform (\$0.3 million). Selling expense was \$24.4 million in the six months ended June 30, 2008, a decrease of \$1.7 million, or 6.5%, compared with \$26.1 million in the six months ended June 30, 2007. The decrease was driven primarily by decreased travel costs (\$0.6 million), decreased separation costs (\$0.5 million), decreased payroll costs (\$0.3 million) and decreased commissions expense (\$0.2 million).

General and Administrative

General and administrative expense was \$10.9 million in the three months ended June 30, 2008, an increase of \$0.7 million, or 6.9%, compared with \$10.2 million in the three months ended June 30, 2007. The increase was driven primarily by increased professional fee expenses (\$1.0 million), offset by decreased payroll related costs (\$0.2 million). General and administrative expense was \$20.7 million in the six months ended June 30, 2008, unchanged as compared with the six months ended June 30, 2007. Increased professional fee expenses (\$1.2 million) were offset by decreased payroll related costs (\$0.3 million), decreased lease, travel, utilities, sales tax and insurance expense (\$0.3 million), lower stock compensation costs (\$0.2 million) and lower depreciation expense (\$0.2 million).

Other Income (Expense)

Equity income (loss) attributable to SEN was \$(0.1) million for the three and six months ended June 30, 2008. This is compared to equity income attributable to SEN of \$1.9 million and \$6.6 million for the three and six months ended June 30, 2007, respectively. The fluctuations in equity income from SEN reflect changes in its sales volume and net income resulting from demand changes in the weakening Japanese semiconductor market, and the timing of revenue recognition in Japan.

Interest income of \$0.4 million and \$1.1 million for the three and six months ended June 30, 2008, respectively, primarily relates to interest earned on cash, cash equivalents and short-term investments. Interest income decreased by \$0.7 million and \$1.5 million from the three and six months ended June 30, 2007, respectively, due primarily to lower average cash balances.

Interest expense of \$1.7 million and \$3.3 million in the three and six months ended June 30, 2008, respectively, an increase of \$0.1 million over each of the three and six months ended June 30, 2007, respectively, relates primarily to outstanding convertible senior subordinated notes which have an effective yield to maturity of 8%.

Income Taxes

Income tax expense was \$0.3 million and \$0.7 million for the three and six months ended June 30, 2008, respectively. Income tax expense relates principally to operating results of foreign entities in jurisdictions, principally in Asia, where we earn taxable income.

Income taxes (credits) were \$(1.0) million and \$(0.3) million in the three and six months ended June 30, 2007. During the three month period ended June 30, 2007, we recorded tax benefits related to the realization of foreign tax credits, which allowed the Company to recover approximately \$1.2 million in tax refunds of amounts paid for alternative minimum taxes remitted for tax years 2004 through 2007.

We have significant net operating loss carryforwards in the United States and certain foreign jurisdictions, principally Europe, and, as a result, we do not currently pay significant income taxes in those jurisdictions and we do not recognize the tax benefit for such losses. Accordingly, our effective income tax rate is not meaningful.

Liquidity and Capital Resources

Unrestricted cash, cash equivalents, and marketable securities at June 30, 2008 were \$59.7 million, compared with \$83.9 million at December 31, 2007. The \$24.2 million decrease in cash, cash equivalents, and short-term investments is mainly attributable to cash used by operations (\$23.6 million) and capital expenditures (\$2.3 million).

Capital expenditures were \$2.3 million and \$6.2 million for the six months ended June 30, 2008 and 2007, respectively. We have no significant capital projects planned for 2008 and total capital expenditures for 2008 are projected to be less than \$5.0 million. Future capital expenditures beyond 2008 will depend on a number of factors, including the timing and rate of expansion of our business.

We have net operating loss and tax credit carryforwards the tax effect of which aggregate \$86.7 million at December 31, 2007. These carryforwards, which expire principally between 2021 and 2027, are available to reduce future income tax liabilities in the United States and certain foreign jurisdictions.

In 2006, Axcelis and SHI agreed upon an annual dividend relating to SEN's fiscal year ended March 31, 2006. The two shareholders instructed SEN to dividend 40% of SEN's net earnings for that year. On January 31, 2007, Axcelis received a payment of approximately \$5.7 million representing its 50% share of the dividend. In 2007 the Company entered into an agreement with SHI pursuant to which SEN will be instructed to dividend 40% of its net income annually. On July 31, 2007 the Company received a dividend of \$6.7 million for SEN's fiscal year ended March 31, 2007. On July 31, 2008 the Company received a dividend of \$1.9 million for SEN's fiscal year ended March 31, 2008.

As discussed in Note 8 to the consolidated financial statements accompanying this Form 10-Q, on May 2, 2006, we entered into an exchange and purchase agreement pursuant to which the holder of an aggregate of approximately \$50.8 million of our existing 4.25% Convertible Subordinated Notes due January 15, 2007 (the "Old Notes"), agreed to exchange its Old Notes for \$50.8 million in aggregate principal amount of our newly issued 4.25% Convertible Senior Subordinated Notes due January 15, 2009 (the "New Notes"), plus accrued and unpaid interest on the Old Notes through but excluding May 2, 2006, the closing date of the exchange. At maturity, the Company is required to repay the outstanding principal of the New Notes, plus a maturity premium of 11.125% of such principal, resulting in an effective annual yield to maturity of approximately 8.0%. In addition, we issued an additional \$24.2 million of New Notes, resulting in an aggregate of \$75 million of New Notes outstanding. We repaid the remaining \$74.2 million of outstanding Old Notes in January 2007.

We have outstanding standby letters of credit, bank guarantees and surety bonds in the amount of \$19.6 million to support certain operating lease obligations, workers' compensation insurance, and

certain value added tax claims in Europe. At June 30, 2008, \$14.8 million of cash was pledged as collateral for certain outstanding standby letters of credit and bank guarantees, and is reflected as restricted cash on the consolidated balance sheet.

Axcelis' liquidity is affected by many factors. Some of these factors are based on normal operations of the business, including acceptance of the Optima product line, and others relate to the uncertainties of global economies and the semiconductor equipment industry. During the first half of 2008, the Company experienced negative cash flows from operations and as of June 30, 2008, the Company had approximately \$59.7 million of cash and cash equivalents. Furthermore, as of June 30, 2008, the Company's New Notes (see Note 8), due January 15, 2009, are classified as current liabilities.

The Company anticipates continued cash outflows in the third quarter of 2008, and believes it will need to preserve existing cash and cash equivalents to support operations. The Company expects that existing cash and cash equivalents and expected cash flow for the remainder of 2008, based primarily on current expectations of customer ordering patterns, will be sufficient to satisfy the Company's anticipated cash requirements for the remainder of 2008. However, the Company believes it will need to secure new financing to repay the New Notes in January 2009, and is exploring various financing alternatives. The amount and timing of the Company's financing needs depends on the accuracy of our assumptions about levels of sales and expenses, and a number of other factors described in "Risk Factors," in the Company's Form 10-K for the year ended December 31, 2007. In addition, should the Company continue to experience losses and negative cash flows from operations, long-lived assets may become subject to impairment in future periods.

On April 23, 2008, the Company entered into a revolving credit facility with a bank that provides for borrowings up to the lesser of (A) \$50 million or (B) specified percentages of the amounts of qualifying accounts receivable and inventory (approximately \$29 million at June 30, 2008). Presently, the Company's 2008 forecast does not anticipate drawing down on the facility because the Company is not currently, and does not expect to become, in compliance with the financial covenants that, among other things, limit the amounts of net loss the Company can incur in the second and third quarters of 2008 and specify that the Company must report net income in the fourth quarter of 2008 and thereafter.

Currently, the Company is seeking to address its financing requirements through a combination of a sale-leaseback of the Company's headquarters and manufacturing facility located in Beverly, Massachusetts, and a secured loan facility with one or more lenders, which may include the bank which provided the existing facility, the holder of the New Notes or new lenders. The terms of these financing transactions will depend on market conditions and the Company's performance and financial condition. The Company expects that the terms of any new debt financing will be less attractive than the terms of the New Notes. There can be no assurance that any financing transaction will be completed. Should the Company not be able to obtain financing with acceptable terms and/or current estimates for anticipated cash flow in 2008 prove incorrect, the Company's management may seek alternative strategies intended to improve the Company's cash position. These strategies could include initiating further efforts to restructure the business and reduce the revenue breakeven level and equity financings that could be dilutive to the existing holders of our common stock.

Outlook

Our performance is directly related to semiconductor manufacturers' levels of capital expenditures to open new fabrication facilities and expand existing ones, as well as operational improvements we have implemented over the past several years. The level of capital expenditures by these manufacturers depends upon the current and anticipated market demand for semiconductors and the products utilizing them, the available manufacturing capacity in manufacturers' fabrication facilities, and the

ability of manufacturers to increase productivity in existing facilities without incurring additional capital expenditures. However, we expect continued market weakness during the balance of 2008.

On August 8, 2008, we announced that Axcelis' revenues for the third quarter of 2008 are forecast in the range of \$47 million to \$57 million. We expect results of operations will be a loss per share of approximately \$0.21 to \$0.25.

It is difficult to predict our customers' capital spending plans since they can change very quickly. At our current sales level, each sale, or failure to make a sale, could have a material effect on our results of operations in a particular quarter.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

As of June 30, 2008, there have been no material changes to the quantitative and qualitative information about market risk disclosed in Item 7A to our annual report on Form 10-K for the year ended December 31, 2007.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the period covered by this quarterly report (the "Evaluation Date"). Based on this evaluation, our principal executive officer and principal financial officer concluded that, as of the Evaluation Date, these disclosure controls and procedures are effective.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) identified in connection with the evaluation of our internal control that occurred during our second quarter of 2008 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 1. Legal Proceedings.

The Company is not presently a party to any litigation that it believes might have a material adverse effect on its business operations. The Company is, from time to time, a party to litigation that arises in the normal course of its business operations.

Item 1A. Risk Factors.

As of June 30, 2008, there have been no material changes to the risk factors disclosed in Item 1A to our annual report on Form 10-K for the year ended December 31, 2007.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

None.

Item 3. Defaults Upon Senior Securities.

None.

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

The Annual Meeting of Stockholders of Axcelis Technologies, Inc. was held at our offices at 108 Cherry Hill Drive, Beverly, Massachusetts on May 1, 2008. Out of 102,448,670 shares of Common Stock (as of the record date of March 14, 2008) entitled to vote at the meeting, 95,607,745 shares, or 93.32%, were present in person or by proxy.

- (a) *Election of Directors.* Each of the three directors nominated for election at the Annual Meeting was elected by a plurality of votes cast, to serve for a three year term ending in 2011, and until their successors are elected. The vote was as follows:

<u>Nominee</u>	<u>Number of Votes For</u>	<u>Number of Votes Withheld</u>
R. John Fletcher	40,393,217	55,214,528
Stephen R. Hardis	40,402,432	55,205,313
H. Brian Thompson	40,388,548	55,219,197

- (b) *Ratification of Appointment of Auditors.* A majority of the votes cast at the meeting were voted in favor of the proposal to ratify the appointment by the Board of Directors of Ernst & Young LLP as independent auditors of our financial statements for the year ending December 31, 2008. The following sets forth the tally of the votes cast on the proposal:

<u>Number of Votes For</u>	<u>Number of Votes Against</u>	<u>Number of Votes Abstaining</u>
92,685,124	2,089,540	833,081

- (c) *Proposal to Amend the Restated Certificate of Incorporation.* Less than 75% of the shares outstanding were voted in favor of the proposal to amend the Certificate of Incorporation of the Company to declassify the Board of Directors and therefore the amendment of the Certificate of Incorporation has not been approved by the shareholders. The following sets forth the tally of the votes cast on the proposal:

<u>Number of Votes For</u>	<u>Number of Votes Against</u>	<u>Number of Votes Abstaining</u>	<u>Number of Broker Non-Votes</u>
76,486,422	5,988,351	1,361,910	11,771,062

Item 5. Other Information.

None.

Item 6. Exhibits.

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

<u>Exhibit No</u>	<u>Description</u>
3.1	Amended and Restated Certificate of Incorporation of the Company. Incorporated by reference to Exhibit 3.1 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
3.2	Bylaws of the Company, as amended as of August 8, 2007. Incorporated by reference to Exhibit 3.2 of the Company's Form 10-Q for the quarter ended June 30, 2007, filed with the Commission on August 9, 2007.
3.3	Certificate of Designation of Series A Participating Preferred Stock, filed with the Secretary of State of Delaware on July 5, 2000. Incorporated by reference to Exhibit 3.3 of the Company's Form 10-K for the year ended December 31, 2000, filed with the Commission on March 30, 2001.
10.1	Loan and Security Agreement dated as of April 23, 2008 between Axcelis Technologies, Inc. and Silicon Valley Bank. Incorporated by reference to Exhibit 10.1 of the Company's Form 10-Q for the quarter ended March 31, 2008, filed with the Commission on May 12, 2008.
31.1	Certification of the Principal Executive Officer under Exchange Act Rule 13a-14(a)/15d-14(a) (Section 302 of the Sarbanes-Oxley Act), dated August 8, 2008. Filed herewith.
31.2	Certification of the Principal Financial Officer under Exchange Act Rule 13a-14(a)/15d-14(a) (Section 302 of the Sarbanes-Oxley Act), dated August 8, 2008. Filed herewith.
32.1	Certification of the Principal Executive Officer pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code (Section 906 of the Sarbanes-Oxley Act), dated August 8, 2008. Filed herewith.
32.2	Certification of the Principal Financial Officer pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code (Section 906 of the Sarbanes-Oxley Act), dated August 8, 2008. Filed herewith.

QuickLinks

PART 1—FINANCIAL INFORMATION

Item 1. Financial Statements.

[Axcelis Technologies, Inc. Consolidated Statements of Operations \(In thousands, except per share amounts\)\(Unaudited\)](#)

[Axcelis Technologies, Inc. Consolidated Balance Sheets \(In thousands\)\(Unaudited\)](#)

[Axcelis Technologies, Inc. Consolidated Statements of Cash Flows \(In thousands\)\(Unaudited\)](#)

[Axcelis Technologies, Inc. Notes To Consolidated Financial Statements \(Unaudited\) \(All tabular amounts in thousands, except per share amounts\)](#)

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

Item 4. Controls and Procedures.

Item 1. Legal Proceedings.

Item 1A. Risk Factors.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

Item 3. Defaults Upon Senior Securities.

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

Item 5. Other Information.

Item 6. Exhibits.

SIGNATURES

CERTIFICATION
of the Principal Executive Officer
Pursuant to Rule 13a-14(a)/15d-14(a) (implementing Section 302 of the Sarbanes-Oxley Act)

I, Mary G. Puma, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Axcelis Technologies, 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 company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company 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 company, 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) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the company'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
 - (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the company'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 company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company'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 company'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: August 8, 2008

/s/ MARY G. PUMA

Mary G. Puma,
Chairman, Chief Executive Officer and President

QuickLinks

[Exhibit 31.1](#)

CERTIFICATION
of the Principal Financial Officer
Pursuant to Rule 13a-14(a)/15d-14(a) (implementing Section 302 of the Sarbanes-Oxley Act)

I, Stephen G. Bassett, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Axcelis Technologies, 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 company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company 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 company, 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) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the company'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
 - (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the company'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 company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company'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 company'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: August 8, 2008

/s/ STEPHEN G. BASSETT

Stephen G. Bassett,
Executive Vice President and Chief Financial Officer

QuickLinks

[Exhibit 31.2](#)

AXCELIS TECHNOLOGIES, INC.
Certification of the Principal Executive Officer
Pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code

The undersigned Chief Executive Officer of Axcelis Technologies, Inc., a Delaware corporation, hereby certifies, for the purposes of Section 1350 of Chapter 63 of title 18 of the United States Code (as implemented by Section 906 of the Sarbanes-Oxley Act of 2002) as follows:

This Form 10-Q quarterly report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and the information contained herein fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, the undersigned has executed this Certification as of August 8, 2008.

/s/ MARY G. PUMA

Mary G. Puma

Chairman, Chief Executive Officer and President of Axcelis Technologies, Inc.

QuickLinks

[Exhibit 32.1](#)

AXCELIS TECHNOLOGIES, INC.
Certification of the Principal Financial Officer
Pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code

The undersigned Chief Financial Officer of Axcelis Technologies, Inc., a Delaware corporation, hereby certifies, for the purposes of Section 1350 of Chapter 63 of title 18 of the United States Code (as implemented by Section 906 of the Sarbanes-Oxley Act of 2002) as follows:

This Form 10-Q quarterly report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and the information contained herein fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, the undersigned has executed this Certification as of August 8, 2008.

/s/ STEPHEN G. BASSETT

Stephen G. Bassett
*Executive Vice President and Chief Financial Officer of
Axcelis Technologies, Inc.*

QuickLinks

[Exhibit 32.2](#)