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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, 2009

or

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

For the transition period from to

Commission file number 000-30941

AXCELIS TECHNOLOGIES, INC.
(Exact name of registrant as specified in its charter)

Delaware	**34-1818596**
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)

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 o.

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, of any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No o.

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

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

As of August 7, 2009 there were 103,856,495 shares of the registrant's common stock outstanding.

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PART 1—FINANCIAL INFORMATION

Item 1. Financial Statements.

Axcelis Technologies, Inc.

Consolidated Statements of Operations

(In thousands, except per share amounts)

(Unaudited)

	Three months ended June 30, 2009	Three months ended June 30, 2008	Six months ended June 30, 2009	Six months ended June 30, 2008
Revenue				
Product	$ 25,764	$ 61,268	$ 43,498	$ 131,052
Service	7,611	14,205	15,395	28,198
Royalties, primarily from SEN	175	1,416	385	2,533
	33,550	76,889	59,278	161,783
Cost of revenue				
Product	22,658	42,159	40,890	90,147
Service	5,006	7,640	9,495	15,330
	27,664	49,799	50,385	105,477
Gross profit	5,886	27,090	8,893	56,306
Operating expenses				
Research and development	7,752	16,954	17,287	33,807
Sales and marketing	6,285	12,475	13,164	24,380
General and administrative	8,531	10,878	19,201	20,692
Amortization of intangible assets	—	656	—	1,312
Restructuring charges	4,114	3,017	5,098	3,068
	26,682	43,980	54,750	83,259
Loss from operations	(20,796)	(16,890)	(45,857)	(26,953)
Other income (expense)				
Gain on sale of SEN	—	—	1,080	—
Equity loss of SEN	—	(133)	(3,238)	(132)
Interest income	30	391	93	1,081
Interest expense	—	(1,680)	(1,676)	(3,281)
Other, net	(1,311)	(767)	(1,516)	(449)
	(1,281)	(2,189)	(5,257)	(2,781)
Loss before income taxes	(22,077)	(19,079)	(51,114)	(29,734)
Income taxes	302	318	420	744
Net loss	$ (22,379)	$ (19,397)	$ (51,534)	$ (30,478)
Net loss per share				
Basic and diluted net loss per share	$ (0.22)	$ (0.19)	$ (0.50)	$ (0.30)
Shares used in computing basic and diluted net loss per share				
Weighted average common shares	103,286	102,450	103,285	102,449

See accompanying Notes to these Consolidated Financial Statements

Axcelis Technologies, Inc.

Consolidated Balance Sheets

(In thousands)

(Unaudited)

	June 30, 2009	December 31, 2008
ASSETS		
Current assets		
Cash and cash equivalents	$ 49,771	$ 37,694
Restricted cash	6,927	8,654
Accounts receivable, net	23,305	27,486
Inventories, net	132,985	150,113
Prepaid expenses and other current assets	11,160	17,231
Total current assets	224,148	241,178
Property, plant and equipment, net	42,876	44,432
Investment in SEN	—	156,677
Other assets	11,157	12,894
	$ 278,181	$ 455,181
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 6,796	$ 8,066
Accrued compensation	16,095	15,841
Warranty	1,251	3,137
Income taxes	504	337
Deferred revenue	7,906	12,508
Other current liabilities	3,866	6,897
Current portion of convertible subordinated debt	—	83,210
Total current liabilities	36,418	129,996
Long-term deferred revenue	1,402	1,872
Other long-term liabilities	3,567	3,936
Commitments and contingencies (Note 13)		
Stockholders' equity		
Preferred stock	—	—
Common stock	104	103
Additional paid-in capital	484,929	483,546
Treasury stock	(1,218)	(1,218)
Accumulated deficit	(250,013)	(198,479)
Accumulated other comprehensive income	2,992	35,425
	236,794	319,377
	$ 278,181	$ 455,181

See accompanying Notes to these Consolidated Financial Statements

Axcelis Technologies, Inc.

Consolidated Statements of Cash Flow

(In thousands)

(Unaudited)

	Six months ended June 30, 2009	Six months ended June 30, 2008
Cash flows from operating activities		
Net loss	$ (51,534)	$ (30,478)
Adjustments to reconcile net loss to net cash used for operating activities		
Undistributed loss of SEN	3,238	132
Depreciation and amortization	3,727	10,107
Gain on sale of SEN	(1,080)	—
Amortization of intangible assets	—	1,312
Accretion of premium on convertible debt	133	1,611
Stock-based compensation expense	1,316	2,166
Provision for excess inventory	7,492	954
Changes in operating assets & liabilities		
Accounts receivable	4,117	25,609
Inventories	9,229	(8,116)
Prepaid expenses and other current assets	5,956	15,424
Accounts payable & other current liabilities	(5,932)	(15,596)
Deferred revenue	(5,072)	(22,723)
Income taxes	139	218
Other assets and liabilities	(401)	(4,193)
Net cash used for operating activities	(28,672)	(23,573)
Cash flows from investing activities		
Expenditures for property, plant, and equipment	(354)	(2,289)
Decrease in restricted cash	1,741	3,354
Proceeds from sale of SEN	132,847	—
Payments related to sale of SEN	(10,590)	—
Net cash provided by investing activities	123,644	1,065
Cash flows from financing activities		
Repayment of convertible debt	(83,344)	—
Proceeds from exercise of stock options	—	86
Proceeds from Employee Stock Purchase Plan	65	771
Net cash provided by (used for) financing activities	(83,279)	857
Effect of exchange rate changes on cash	384	(2,575)
Net increase (decrease) in cash and cash equivalents	12,077	(24,226)
Cash and cash equivalents at beginning of period	37,694	83,877
Cash and cash equivalents at end of period	$ 49,771	$ 59,651

See accompanying Notes to these Consolidated Financial Statements

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.

During the six months ended June 30, 2009, the Company experienced negative cash flows from operations. Cash used for operations in the six months ended June 30, 2009 was predominately driven by the net loss from operations attributable to the depressed semiconductor equipment market and the resultant decline in revenues. Cash and cash equivalents at June 30, 2009 were $49.8 million, compared to $71.2 million at March 31, 2009. The $21.4 million decrease in cash and cash equivalents is mainly attributable to the cash used in operations and payments of fees and other costs associated with the sale of the Company's investment in SEN. The Company anticipates net cash outflows from operations in the remainder of 2009.

The Company does not currently have access to any source of credit. The Company is continuing to explore new financing sources. However, in light of the current negative economic environment generally, the lending environment specifically, and the ongoing depressed semicap equipment market, the Company anticipates that it would be very difficult to obtain significant new credit on favorable terms at this time, if at all.

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, including the availability of credit, and the state of the semiconductor equipment industry. Although the Company's cash requirements fluctuate based on the timing and extent of these factors, the Company believes that based on the current market, revenue and expense forecasts, the Company's existing cash and cash equivalents will be sufficient to satisfy the Company's anticipated cash requirements at least through June 2010 and into the foreseeable future. However, if the downturn in the semicap equipment industry continues into 2010 and the Company's operating performance does not improve significantly as compared to the six months ended June 30, 2009, it could have a significant effect on the Company's liquidity and its ability to continue in the future as a going concern.

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, 2008 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, 2008.

Note 2. Sale of Investment in SEN

Until March 30, 2009, the Company owned 50% of the equity of a joint venture with Sumitomo Heavy Industries, Ltd. ("SHI") in Japan. This joint venture, which was known as SEN Corporation, an SHI and Axcelis Company ("SEN"), licensed technology from the Company relating to the manufacture of specified ion implantation products and had exclusive rights to manufacture and sell these products in the territory of Japan. On March 30, 2009, pursuant to a Share Purchase Agreement dated February 26, 2009, the Company sold to SHI all of the Company's common shares in SEN in exchange for a cash payment of 13 billion Yen, which resulted in proceeds of approximately $132.8 million before advisor fees and other expenses of $10.6 million, of which $7.1 million was paid during the quarter ended June 30, 2009. The sales price was determined through an arm's length negotiation. This transaction terminated all prior agreements among the three parties relating to the SEN joint venture. In addition, the arbitration with SEN initiated by Axcelis in Tokyo was dismissed.

In connection with the sale of its investment in SEN, on March 30, 2009, the Company and SEN entered into a License Agreement pursuant to which the parties have cross licensed each other to use certain patents and technical information on a non-exclusive, perpetual, royalty-free, worldwide basis, provided that the Company and SEN received sole exclusive licenses for 4 years in the U.S. and Japan, respectively. The licenses to technical information cover only technical information shared by the parties prior to the date of the license, so the license to SEN does not cover technical information relating to the Optima HD and Optima XE. The license also excludes patents relating to Axcelis' work in molecular implant and certain patents developed for the Optima HD and Optima XE. The parties provided each other with limited warranties regarding their right to grant these licenses, and indemnity with respect thereto, but disclaim any warranty regarding the validity or freedom from infringement of the licensed intellectual property. Neither party will provide any support for the other party's use of the licensed intellectual property.

The sale of the Company's investment in SEN on March 30, 2009, resulted in a gain of approximately $1.1 million. This gain includes net proceeds of $122.2 million (after payment of advisor fees and other costs of $10.6 million) and cumulative foreign translation gain of $23.5 million, previously recorded in other comprehensive income, reduced by the carrying value of the investment on the date of sale of $144.6 million. The gain from the sale of the Company's investment in SEN is recorded in other income.

A portion of the proceeds of the sale were used to pay off, in full, the amounts due to the holder of the Company's 4.25% Convertible Senior Subordinated Notes.

Note 3. Long-lived Assets

In accordance with Financial Accounting Standards Board (FASB) Statement No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets* (SFAS 144), the Company records impairment losses on intangibles and long-lived assets when events and circumstances indicate that long-lived assets might not be recoverable. Recoverability is measured by a comparison of the assets' carrying amount to their expected future undiscounted net cash flows. If such assets are considered to be impaired, the impairment is measured based on the amount by which the carrying value exceeds its fair value.

During the fourth quarter of 2008, the Company experienced a sustained market capitalization below book value, as well as a significant decline in its business that led it to revise its short-term and long-term financial forecasts. As a result, the Company recorded a total intangible and long-lived asset impairment charge at December 31, 2008 of $46.9 million.

Note 3. Long-lived Assets (Continued)

During the three and six months ended June 30, 2009, the Company continued to experience events and circumstances which indicated that a further impairment of long-lived assets may have occurred. The significant decline in the Company's stock price experienced in 2008 continued through June 30, 2009, maintaining market capitalization well below book value. In addition, the estimated future total available market for the Company's products, which was significantly revised downward in the fourth quarter of 2008, showed no significant signs of recovery as of June 30, 2009.

Accordingly, as of June 30, 2009, the Company performed an analysis comparing the undiscounted cash flows estimated to be generated by the long-lived assets to the carrying amounts of those assets. The estimates of future operating results and cash flows are derived from the Company's updated long-term financial forecast. This updated long-term forecast represents the best estimate that the Company has at this time and the Company believes that its underlying assumptions are reasonable, based primarily on current product performance and customer acceptance. This forecast relies primarily on market assumptions and market share Axcelis expects to achieve. As of June 30, 2009, the Company's analysis demonstrated that the carrying amounts for long-lived assets are expected to be recovered, so the Company did not record an impairment. However, actual performance could be materially different from the Company's current forecasts, which could impact future estimates of undiscounted cash flows and may result in the impairment of the carrying amount of long-lived assets in the future. This could be caused by strategic decisions made in response to economic and competitive conditions, the impact of the economic environment on the Company's customer base, or a material negative change in the Company's relationships with significant customers. Accordingly, the Company will continue to perform this analysis no less than quarterly for the foreseeable future.

Note 4. 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 14 to the consolidated financial statements in the Company's 2008 Annual Report on Form 10-K.

Under SFAS No. 123R, the Company recognized stock-based compensation expense of $0.5 million and $1.3 million for the three and six months ended June 30, 2009, respectively. For the three and six months ended June 30, 2008, the Company recognized stock-based compensation expense of $1.2 million and $2.2 million respectively. These amounts include the impact of recognizing compensation expense related to restricted stock units, restricted stock, non-qualified stock options and stock under the ESPP.

Note 5. 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.

Note 5. Net Income Per Share (Continued)

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 or grant 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. For purposes of computing diluted earnings per share, the Company excluded 2.1 million shares of common stock for the assumed conversion of the Company's convertible debt for the six months ended June 30, 2009 as the effect of conversion would be anti-dilutive. The Company excluded 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 from the computation of diluted earnings per share as the effect of conversion would be anti-dilutive.

Note 6. Comprehensive Income

The components of comprehensive income follow:

	Three months ended June 30,		Six months ended June 30,	
	2009	2008	2009	2008
	(in thousands)		(in thousands)	
Net loss	$(22,379)	$(19,397)	$(51,534)	$(30,478)
Other comprehensive income				
Foreign currency translation adjustments	2,823	(9,128)	(8,966)	9,188
	$(19,556)	$(28,525)	$(60,500)	$(21,290)

Note 7. Inventories

The components of inventories follow:

	June 30, 2009	December 31, 2008
	(in thousands)	
Raw materials	$ 82,186	$ 93,996
Work in process	32,560	35,977
Finished goods (completed systems)	18,239	20,140
	$132,985	$ 150,113

When recorded, reserves are intended to reduce the carrying value of inventory to its net realizable value. The Company establishes inventory reserves when conditions exist that indicate inventory may be in excess of anticipated demand or is obsolete based upon assumptions about future demand for the Company's products or market conditions. The Company regularly evaluates the ability to realize the value of inventory based on a combination of factors including the following: forecasted sales or usage, estimated product end of life dates, estimated current and future market value and new product introductions. Purchasing and usage alternatives are also explored to mitigate inventory exposure.

Approximately $59.5 million and $61.9 million of net inventory at June 30, 2009 and December 31, 2008, respectively, relates to the Optima product family.

Note 8. Restructuring Charges

In the three and six months ended June 30, 2009, the Company implemented a reduction in force related to planned actions taken by management to control costs and improve the focus of its operations in order to sustain future profitability and conserve cash. This reduction in force resulted in a total charge to restructuring expense of approximately $5.6 million related to severance and related costs for the six months ended June 30, 2009, offset by a reversal of $0.5 million of accrued compensation expenses related to terminated employees. A charge to expense of $4.6 million was recorded in the three months ended June 30, 2009, offset by a reversal of $0.5 million of accrued compensation expense related to terminated employees. During the six months ended June 30, 2009, a total of $3.8 million was paid, which included $2.6 million paid in the three months ended June 30, 2009. The balance of $2.6 million is expected to be paid in the periods extending through the first quarter of 2010.

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

	(in thousands)
Balance at December 31, 2008	$ 746
Severance and related costs	5,627
Cash payments	(3,817)
Balance at June 30, 2009	$ 2,556

Note 9. 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.

Note 9. Product Warranty (Continued)

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

	Six months ended June 30,	
	2009	2008
	(in thousands)	
Balance at December 31	$ 3,530	$ 6,245
Warranties issued during the period	388	1,774
Settlements made during the period	(1,302)	(3,088)
Changes in estimate of liability for pre-existing warranties during the period	(1,310)	(234)
Balance at June 30	$ 1,306	$ 4,697
Amount classified as current	$ 1,251	$ 3,931
Amount classified as long-term	55	766
Total Warranty Liability	$ 1,306	$ 4,697

Note 10. Financial Arrangements

On January 15, 2009, Axcelis failed to make the required payment of approximately $85 million under an Indenture dated as of May 2, 2006 between Axcelis and U.S. Bank National Association, as Trustee, relating to the Company's 4.25% Convertible Senior Subordinated Notes. Such failure constituted an event of default under the Indenture. Pursuant to the Indenture and as a result of the failure by Axcelis to make the required payment, Axcelis was required to pay, upon demand of the Trustee, the entire overdue amount, plus interest at a rate of 8.0% per annum, plus certain additional costs and expenses associated with the collection of such amounts. In January 2009, the Trustee filed a Complaint in US District Court in New York seeking a judgment for the amount due on the Notes. In February 2009, as an inducement to enter into the Share Purchase Agreement dated February 26, 2009 with SHI and SEN (see Note 2.), the Trustee confirmed in writing that a judgment would not be entered in their litigation against Axcelis until after April 13, 2009, during which time it was contemplated that the closing under the Share Purchase Agreement would occur. On March 30, 2009, the Company completed the sale of SEN and a portion of the net proceeds was used to repay all amounts due under the Indenture, resulting in an extinguishment of the debt in full.

On April 23, 2008, the Company entered into a revolving credit facility with a bank that provides for borrowings up to the lesser of $50.0 million or specified percentages of the amounts of qualifying accounts receivable and inventory. The Company is currently unable to borrow against the facility because it is not currently, and does not expect to become, in compliance with the financial covenants contained in the underlying credit agreement. This facility expires in April 2010. If the Company terminates this revolving credit facility prior to its expiration, the Company will have to pay an early termination fee of approximately $0.5 million.

Note 11. 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

Note 11. Income Taxes (Continued)

significant income taxes in those jurisdictions. Accordingly, the effective income tax rate is not meaningful.

Note 12. Significant Customers

For the three months ended June 30, 2009, three customers accounted for approximately 12.1%, 10.2%, and 10.0% of revenue respectively. For the six months ended June 30, 2009, one customer accounted for approximately 11.4% of revenue. For the three months ended June 30, 2008, no single customer accounted for more than 10% of revenue. For the six months ended June 30, 2008, one customer accounted for 16% of revenue.

Note 13. Contingencies

Litigation

In January 2009, the Trustee under the Indenture relating to the Company's 4.25% Convertible Senior Subordinated Notes, filed a Complaint in US District Court in New York seeking a judgment for the amount due on the Notes (a total of approximately $85 million) as a result of the Company's failure to pay the principal and interest due on the Notes on January 15, 2009, discussed in Note 10 above. In February 2009, as an inducement to enter into the Share Purchase Agreement dated February 26, 2009 with SHI and SEN, the Trustee confirmed in writing that judgment would not be entered in this litigation until after April 13, 2009, during which time it was contemplated that the closing under the Share Purchase Agreement would occur. On March 30, 2009, the Company completed the sale of SEN and a portion of the net proceeds was used to repay all amounts due under the Indenture. (See Note 2.) This litigation has been dismissed.

Prior to the sale, SEN and Axcelis were engaged in an arbitration initiated by Axcelis to establish a basis for setting the royalty for a single wafer, high current ion implant system known as the SHX. SEN had filed counter claims which Axcelis believed had no merit. In January 2009, the Company and SEN agreed to suspend the arbitration indefinitely. In connection with the sale of SEN, this arbitration was dismissed by both parties.

The Company is not presently a party to any other 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 14. 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

Note 14. Recent Accounting Pronouncements (Continued)

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 delays 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. The Company has 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 the Company's financial position or results of operations.

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; or 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) did not 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 did not have a material impact on the Company's financial position, results of operations or liquidity.

In May 2009, the FASB issued SFAS No. 165, *Subsequent Events*, which provides guidance on how companies should assess subsequent events. This statement is effective for interim and annual financial periods ending after June 15, 2009. No significant events have occurred after June 30, 2009 that are expected to have a significant impact on the Company. The Company has evaluated events occurring through August 10, 2009 (the date of issuance).

Note 14. Recent Accounting Pronouncements (Continued)

In June 2009, the FASB issued SFAS No. 168, *Accounting Standards Codification and Hierarchy of Generally Accepted Accounting Principles, a replacement of FASB Statement No. 162*. This statement establishes the FASB Accounting Standards Codification as the source of authoritative accounting principles recognized by the FASB to be applied by nongovernmental entities in the preparation of financial statements in conformity with Generally Accepted Accounting Principles in the United States. This statement is effective for periods ending after September 15, 2009. The Company does not anticipate that the adoption of SFAS No. 168 will have an 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 "Liquidity and Capital Resources," those referred to in "Risk Factors" and others discussed 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, except as may be required by law.

Overview

Axcelis Technologies, Inc. ("Axcelis," "the Company," "we," "us," or "our"), is a worldwide producer of equipment used in the fabrication of semiconductors. In addition, the Company provides extensive aftermarket service and support, including spare parts, equipment upgrades, and maintenance services to the semiconductor industry.

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, fluctuate from year to year and period to period. The industry experienced a downturn beginning in the second half of 2007 which is expected to continue at least through 2009. Our gross margins are also affected by the introduction of new products. We typically become more efficient in manufacturing products as they mature. Our expense base is largely fixed and does not vary significantly with changes in volume. Therefore, we 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 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.

During the three and six months ended June 30, 2009 we incurred net losses. 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 three and six months ended June 30, 2009, we recognized revenue of approximately $4.3 million and $4.5 on sales of the Optima HD, respectively.

During the three and six months ended June 30, 2009, our stock price continued to trade significantly below book value. Our inability to repay our outstanding debt in January 2009 and our inability to generate sufficient cash flows to support ongoing operations have adversely impacted our stock price. In concert with the market uncertainty resulting from the current credit crisis, we believe that declining business and consumer confidence and increased unemployment have precipitated an economic slowdown and fears of a prolonged recession. An economic downturn characterized by higher unemployment, lower family income, lower corporate earnings, lower business investment and lower consumer spending has severely impacted many technology manufacturers and has significantly lowered the demand for our products. As mentioned above, we have lost significant market share in high current ion implant (the largest market segment in ion implant) over the past several years. We believe that we have competitive products in the high current, medium current and high energy ion implant market segments, as well as dry strip. However, challenging market conditions have severely limited our ability to increase sales and market share. We believe that a combination of these factors accounts for the difference between our stock trading price and our book value.

Continuing capital market upheavals will have an adverse effect on our Company because we are dependent on customer behavior. Our revenues would likely continue to decline in such circumstances and our profit margins would continue to erode.

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, including the availability of credit, and the state of the semiconductor equipment industry. Although our cash requirements fluctuate based on the timing and extent of these factors, we believe that, based on our current market, revenue and expense forecast, our existing cash and cash equivalents will be sufficient to satisfy our anticipated cash requirements at least through June 2010 and into the foreseeable future. However, if the downturn in the semicap equipment industry continues into 2010 and our operating performance does not improve significantly as compared to the six months ended June 30, 2009, there could be a significant adverse effect on our liquidity and our ability to continue in the future as a going concern.

Operating results for the periods presented are not necessarily indicative of the results that may be expected for future interim periods or years 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, accounts receivable, inventory and warranty obligations. Management's estimates are based 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.

There has been no material change in the nature of our critical accounting estimates and judgments as described in Management's Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report on Form 10-K for the year ended December 31, 2008.

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,	
	2009	2008	2009	2008
Revenue				
Product	76.8%	79.7%	73.4%	81.0%
Service	22.7	18.5	26.0	17.4
Royalties, primarily from SEN	0.5	1.8	0.6	1.6
Total revenue	100.0	100.0	100.0	100.0
Cost of revenue				
Product	67.5	54.8	69.0	55.7
Services	14.9	9.9	16.0	9.5
Total cost of revenue	82.4	64.8	85.0	65.2
Gross profit	17.6	35.2	15.0	34.8
Operating expenses				
Research and development	23.1	22.0	29.2	20.9
Sales and marketing	18.7	16.2	22.2	15.1
General and administrative	25.4	14.1	32.4	12.8
Amortization of intangible assets	0.0	0.9	0.0	0.8
Restructuring charges	12.3	3.9	8.6	1.9
Total operating expenses	79.5	57.2	92.4	51.5
Loss from operations	(61.9)	(22.0)	(77.4)	(16.7)
Other income (expense)				
Gain on sale of SEN	0.0	0.0	1.8	0.0
Equity income (loss) of SEN	0.0	(0.2)	(5.5)	(0.1)
Interest income	0.1	0.5	0.2	0.7
Interest expense	0.0	(2.2)	(2.8)	(2.0)
Other, net	(3.9)	(1.0)	(2.6)	(0.3)
Total other income (expense)	(3.8)	(2.8)	(8.9)	(1.7)
Loss before income taxes	(65.7)	(24.8)	(86.3)	(18.4)
Income taxes (credits)	0.9	0.4	0.7	0.5
Net loss	(66.6)%	(25.2)%	(87.0)%	(18.8)%

Three and six months ended June 30, 2009 in comparison to the three and six months ended June 30, 2008

Revenue

Product

Product revenue, which includes systems sales, sales of spare parts and product upgrades, was $25.8 million, or 76.8% of revenue, for the three months ended June 30, 2009, compared with $61.3 million, or 79.7% of revenue for the three months ended June 30, 2008. Product revenue was $43.5 million, or 73.4% of revenue for the six months ended June 30, 2009, compared with $131.1 million, or 81.0% of revenue for the six months ended June 30, 2008. System sales were $9.5 million, or 28.3% of revenue, for the three months ended June 30, 2009, compared with $37.2 million, or 48.4% of revenue for the three months ended June 30, 2008. System sales were $16.6 million, or 28.0% of revenue, for the six months ended June 30, 2009, compared with $80.3 million, or 49.6% of revenue, for the six months ended June 30, 2008. Product revenue in 2008 and 2009 has been reduced by our loss of high current market share, as discussed above. The decline in product revenue in the three and six month period ended June 30, 2009 is also attributable to a weakening semiconductor market and a related decrease in capital spending by semiconductor manufacturers, generally, exacerbated by a decrease in capacity expansion at 200mm manufacturing facilities.

A portion of our 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, 2009 and 2008 was $9.3 million and $17.8 million, respectively. The decline was mainly due to the decrease in systems sales in 2008 and the three and six months ended June 30, 2009.

Service

Service revenue, which includes the labor component of maintenance and service contracts and fees for service hours provided by on-site service personnel, was $7.6 million, or 22.7% of revenue, for the three months ended June 30, 2009, compared with $14.2 million, or 18.5% of revenue, for the three months ended June 30, 2008. Service revenue was $15.4 million, or 26.0% of revenue for the six months ended June 30, 2009, compared with $28.2 million, or 17.4% of revenue for the six months ended June 30, 2008. Although service revenue should increase with the expansion of the installed base of systems, it can fluctuate from period to period based on capacity utilization at customers' manufacturing facilities, which affects the need for equipment service. The decline during the three and six months ended June 30, 2009 was primarily due to the continuing depressed fabrication utilization in the semiconductor industry.

Royalties

Royalty revenue was $0.2 million, or 0.5% of revenue, for the three months ended June 30, 2009, compared with $1.4 million, or 1.8% of revenue, for the three months ended June 30, 2008. Royalty revenue for the six months ended June 30, 2009 was $0.4 million, or 0.6% of revenue, compared to $2.5 million, or 1.6%, of revenue for the six months ended June 30, 2008. Royalties were earned primarily under our prior license agreement with SEN Corporation, an SHI and Axcelis Company ("SEN"). Until March 30, 2009, we owned 50% of the equity of a joint venture with Sumitomo Heavy Industries, Ltd. ("SHI") in Japan. This joint venture, known as SEN, licensed technology from us relating to the manufacture of specified ion implantation products and had exclusive rights to manufacture and sell these products in the territory of Japan. Changes in royalty revenue were mainly attributable to fluctuations in SEN sales volume based on demand for equipment by Japanese semiconductor manufacturers and the timing of shipments in Japan. As a result of the sale of the

Company's investment in SEN, on March 30, 2009, SEN has no further obligation to pay royalties to the Company.

Ion Implant

Revenue from sales of ion implantation products and service accounted for $27.3 million, or 81.4% of total revenue, in the three months ended June 30, 2009, compared with $63.9 million, or 83.1% of total revenue, for the three months ended June 30, 2008. Revenue from sales of ion implantation products and service accounted for $49.5 million, or 83.5% of revenue, for the six months ended June 30, 2009, compared to $133.8 million, or 82.7% of revenue, in the six months ended June 30, 2008. The decline was due to the factors discussed above for product revenues.

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 $23.9 million for the three months ended June 30, 2009, compared to $38.3 million for the three months ended June 30, 2008. The revenue from our aftermarket business was $42.3 million for the six months ended June 30, 2009, compared to $78.9 million for the six months ended June 30, 2008. 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. The decline during the three and six months ended June 30, 2009 was primarily due to the continuing depressed fabrication utilization in the semiconductor industry.

Gross Profit

Product

Gross profit from product revenue was 12.1% for the three months ended June 30, 2009, compared to gross profit of 31.2% for the three months ended June 30, 2008. Approximately 7.5% of the 19.1% decrease resulted from an additional provision for excess inventory. The remaining 11.6% decrease is attributable to significantly lower system sales volume during the three months ended June 30, 2009 and the related under absorption of manufacturing overhead, which reduced gross margins by 24.3%, offset by a 12.7% increase in gross margin resulting from the favorable impact of an increased mix of parts and upgrade revenue at higher margins. Gross profit from product revenue was 6.0% for the six months ended June 30, 2009, compared with 31.2% for the six months ended June 30, 2008. Approximately 15.0% of the 25.2% decrease resulted from an additional provision for excess inventory. The remaining 10.2% decrease is attributable to significantly lower systems sales volume during the six months ended June 30, 2009 and the related under absorption of manufacturing overhead, which reduced gross margins by 24.5%, offset by a 14.3% increase in gross margin resulting from the favorable impact of an increased mix of parts and upgrade revenue at higher margins.

Service

Gross profit from service revenue was 34.2% for the three months ended June 30, 2009, compared to 46.2% for the three months ended June 30, 2008. Gross profit from service revenue was 38.3% for the six months ended June 30, 2009, compared to 45.6% for the six months ended June 30, 2008. The decrease in gross profit is attributable to significantly lower volumes.

Research and Development

Research and development expense was $7.8 million in the three months ended June 30, 2009, a decrease of $9.2 million, or 54.1%, compared with $17.0 million in the three months ended June 30, 2008. The decrease was due to decreased payroll costs ($3.8 million), decreased consulting costs ($1.0 million), decreased project material costs ($1.6 million), decreased development asset amortization and depreciation costs ($2.2 million) and decreased other miscellaneous expenses ($0.6 million). Research and development expense was $17.3 million for the six months ended June 30, 2009, a decrease of $16.5 million or 48.8%, compared with $33.8 million for the six months ended June 30, 2008. The decrease was due to decreased payroll costs ($7.0 million), decreased consulting costs ($1.6 million), decreased project material costs ($2.5 million), decreased development asset amortization and depreciation costs ($4.3 million) and decreased other miscellaneous expenses ($1.1 million).

Research and development expense was attributable to the following activities for the six months ended June 30, 2009: 51% for new product development, 32% for improvement of existing products, and 17% for product testing.

Sales and Marketing

Sales and marketing expense was $6.3 million in the three months ended June 30, 2009, a decrease of $6.2 million, or 49.6%, compared with $12.5 million for the three months ended June 30, 2008. The decrease was due to decreased payroll costs ($3.0 million), decreased professional fee expenses ($0.9 million), decreased supplies and marketing service expenses ($1.2 million), decreased travel costs ($0.7 million), decreased freight costs ($0.3 million), and decreased other miscellaneous expenses ($0.1 million). Sales and marketing expense was $13.2 million for the six months ended June 30, 2009, a decrease of $11.2 million, or 45.9%, compared with $24.4 million for the six months ended June 30, 2008. The decrease was driven primarily by decreased payroll costs ($5.7 million), decreased professional fee expenses ($1.8 million), decreased supplies and marketing service expenses ($1.5 million), decreased travel cost ($1.3 million), decreased freight costs ($0.6 million), and decreased other miscellaneous expense ($0.3 million).

General and Administrative

General and administrative expense was $8.5 million for the three months ended June 30, 2009, a decrease of $2.4 million or 22%, compared with $10.9 million in the three months ended June 30, 2008. The decrease was due to decreased payroll costs ($1.6 million), decreased professional fee expenses ($0.3 million), decreased amortization expense ($0.2 million) and decreased other miscellaneous expenses ($0.3 million). General and administrative expense was $19.2 million for the six months ended June 30, 2009, a decrease of $1.5 million, or 7.2%, compared with $20.7 million in the six months ended June 30, 2008. The decrease was due to decreased payroll costs ($2.5 million), decreased amortization costs ($0.4 million), decreased other miscellaneous expenses ($0.5 million), offset by increased professional fees ($1.9 million).

Restructuring

For the three and six months ended June 30, 2009, we implemented a reduction in force to further reduce costs to mitigate deteriorating industry fundamentals. This reduction in force resulted in a total charge to expense of approximately $5.6 million related to separation and outplacement costs for the six months ended June 30, 2009, offset by a reversal of $0.5 million of accrued compensation expense related to terminated employees. A charge to expense of $4.6 million was recorded in the three months ended June 30, 2009, offset by a reversal of $0.5 million of accrued compensation expense related to terminated employees.

Other Income (Expense)

The sale of the Company's investment in SEN resulted in a gain of approximately $1.1 million for the six months ended June 30, 2009. This gain includes net proceeds of $122.2 million and cumulative foreign translation gain of $23.5 million, previously recorded in other comprehensive income, reduced by the carrying value of the investment on the date of sale of $144.6 million.

No equity loss or income was attributable to SEN for the three months ended June 30, 2009. Equity loss attributable to SEN was $3.2 million for the six months ended June 30, 2009. Equity loss attributable to SEN was $0.1 million for the three and six months ended June 30, 2008. As a result of the sale of the Company's investment in SEN, subsequent to March 30, 2009, the Company no longer records equity income or loss from SEN.

Interest income decreased by $0.4 million and $1.0 million from the three and six months ended June 30, 2009, compared to the three and six months ended June 30, 2008, due primarily to lower average cash balances.

Interest expense decreased by $1.7 million and $1.6 million for the three and six months ended June 30, 2009, compared to the three and six months ended June 30, 2008. The decrease for the three and six months ended June 30, 2009 is due to the payment in full of the convertible senior subordinated notes at March 30, 2009.

Income Taxes (Credits)

We incur income tax expense relating principally to operating results of foreign entities in jurisdictions, principally in Asia, where we earn taxable income. 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 as discussed in Note 11 to the consolidated financial statements. Accordingly, our effective income tax rate is not meaningful.

Liquidity and Capital Resources

Our liquidity is affected by many factors. Some of these relate specifically to the operations of our business, for example, the rate of acceptance of the Optima product line, and others relate to the uncertainties of global economies, including the availability of credit, and the condition of the overall semiconductor equipment industry.

During the three and six months ended June 30, 2009, we experienced negative cash flows from operations. Cash used for operations was predominately driven by the net loss from operations attributable to the depressed semiconductor equipment market and the resultant decline in revenues. Unrestricted cash and cash equivalents at June 30, 2009 were $49.8 million, compared to $37.7 million at December 31, 2008. The $12.1 million increase in cash and cash equivalents is primarily attributable to proceeds from the sale of our Investment in SEN on March 30, 2009, partially offset by repayment of our Convertible Senior Subordinated Notes and cash used in operations.

On March 30, 2009, pursuant to the Share Purchase Agreement with SHI and SEN, we sold all of our common shares in SEN to SHI for proceeds of $132.8 million before advisor fees and other expenses of $10.6 million, of which $7.1 million was paid during the quarter ended June 30, 2009. We used $86.4 million ($83.3 million principal and $3.1 million accrued interest and bank fee), of that amount to pay in full our outstanding obligations on our 4.25% Convertible Senior Subordinated Notes.

Our 2009 cash position will be driven by reductions in working capital, as inventory for the Optima product line is converted into revenue.

We have outstanding standby letters of credit, bank guarantees and surety bonds in the amount of $12.1 million to support certain operating lease obligations, workers' compensation insurance, and certain value added tax claims in Europe, of which $6.9 million at June 30, 2009 was supported by cash pledged as collateral. The pledged cash is reflected as restricted cash on the consolidated balance sheet.

On April 23, 2008, we entered into a revolving credit facility with a bank that provides for borrowings up to the lesser of $50 million or specified percentages of the amounts of qualifying accounts receivable and inventory. We are currently unable to borrow against the facility because we are not currently, and do not expect to become, in compliance with the financial covenants contained in the underlying credit agreement. This facility expires in April 2010. If we terminate this revolving credit facility prior to its expiration, we will have to pay an early termination fee of approximately $0.5 million as of the date of termination.

We do not currently have access to any other source of credit. We are continuing to explore new financing sources. However, in light of the current negative economic environment, including the prolonged downturn in the semiconductor and semicap equipment industries, and the negative effect it has had on the Company's results of operations, financial position, liquidity, and the lending environment, we anticipate that it would be very difficult for us to obtain significant new credit on favorable terms, if at all.

We believe that based on our current market, revenue and expense forecasts our existing cash and cash equivalents and the net proceeds from the sale of our SEN investment will be sufficient to satisfy our anticipated cash requirements at least through June 2010 and into the foreseeable future. However, if the downturn in the semicap industry continues into 2010 there could be a significant adverse effect on our liquidity and our ability to continue in the future as a going concern.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

As of June 30, 2009, there have been no material changes to the quantitative information about market risk disclosed in Item 7A to our annual report on Form 10-K for the year ended December 31, 2008.

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 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 the second quarter of 2009 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, 2009, there have been no material changes to the risk factors described in Item 1A to our annual report on Form 10-K for the year ended December 31, 2008.

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 6, 2009. Out of 103,283,850 shares of Common Stock (as of the record date of March 9, 2009 entitled to vote at the meeting, 92,501,394 shares, or 89.56%, were present in person or by proxy.

(a) *Election of Directors.* Each of the two 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 2012, and until their successors are elected. The vote was as follows:

Nominee	Number of Votes For	Number of Votes Withheld
William C. Jennings	76,662,516	15,838,878
Mary G. Puma	75,739,760	16,761,634

(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 the independent auditors of our financial statements for the year ending December 31, 2009. The following sets forth the tally of the votes cast on the proposal:

Number of Votes For	Number of Votes Against	Number of Votes Abstaining
90,768,645	1,634,106	98,643

(c) *Proposal to Amend the Restated Certificate of Incorporation.* The proposal to amend the Certificate of Incorporation of the Company to declassify the Board of Directors was approved by the shareholders. The following sets forth the tally of the votes cast on the proposal:

Number of Votes For	Number of Votes Against	Number of Votes Abstaining	Number of Broker Non-Votes
89,968,526	2,174,486	358,382	0

Item 5. Other Information.

None.

Item 6. Exhibits.

The following exhibits are filed herewith:

Exhibit No	Description
3.1	Amended and Restated Certificate of Incorporation of the Company. Incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed with the Commission on May 11, 2009.
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.
10.1	Letter from Mary G. Puma to the Board of Directors dated May 1, 2009. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the Commission on May 11, 2009.
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 10, 2009. 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 10, 2009. 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 10, 2009. 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 10, 2009. Filed herewith.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

AXCELIS TECHNOLOGIES, INC.

DATED: August 10, 2009

By: /s/ STEPHEN G. BASSETT

Stephen G. Bassett
Executive Vice President and
Chief Financial Officer
Duly Authorized Officer and
Principal Financial Officer

Exhibit 31.1

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 registrant as of, and for, the periods presented in this report;

4. The registrant'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 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) 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 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

   (d) 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(s) 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: August 10, 2009

/s/ MARY G. PUMA

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

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Exhibit 31.2

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 registrant as of, and for, the periods presented in this report;

4. The registrant'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 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) 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 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

   (d) 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(s) 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: August 10, 2009	/s/ STEPHEN G. BASSETT
	Stephen G. Bassett, *Executive Vice President and* *Chief Financial Officer*

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EXHIBIT 32.1

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 10, 2009.

/s/ MARY G. PUMA

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

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EXHIBIT 32.2

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 10, 2009.

/s/ STEPHEN G. BASSETT

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