

**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 March 31, 2007

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 or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

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 May 7, 2007 there were 101,646,992 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 Income
(In thousands, except per share amounts)
(Unaudited)

	Three months ended	
	March 31,	
	2007	2006
Revenue		
Systems	\$ 51,065	\$ 52,404
Services	44,402	44,081
Royalties, primarily from SEN	2,059	1,436
	<u>97,526</u>	<u>97,921</u>
Cost of revenue	56,276	58,879
Gross profit	<u>41,250</u>	<u>39,042</u>
Operating expenses		
Research and development	18,228	18,212
Sales and marketing	12,938	10,607
General and administrative	10,476	10,853
Amortization of intangible assets	656	612
Restructuring credits	—	(305)
	<u>42,298</u>	<u>39,979</u>
Loss from operations	(1,048)	(937)
Other income (expense)		
Equity income of SEN	4,667	2,216
Interest income	1,454	1,651
Interest expense	(1,668)	(1,641)
Other—net	(24)	(655)
	<u>4,429</u>	<u>1,571</u>
Income before income taxes	3,381	634
Income taxes	709	89
Net income	<u>\$ 2,672</u>	<u>\$ 545</u>
Net income per share		

Basic	\$	0.03	\$	0.01
Diluted		0.03		0.01
Shares used in computing basic and diluted net income per share				
Basic		101,492		100,883
Diluted		102,421		101,823

See accompanying Notes to Consolidated Financial Statements

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

	March 31, 2007	December 31, 2006
ASSETS		
Current assets		
Cash and cash equivalents	\$ 45,412	\$ 140,451
Marketable securities	34,000	63,200
Restricted cash	12,194	11,019
Accounts receivable, net	80,040	73,635
Inventories, net	173,967	160,107
Prepaid expenses and other current assets	33,353	26,639
Total current assets	<u>378,966</u>	<u>475,051</u>
Property, plant & equipment, net	68,063	66,678
Investment in SEN	126,988	126,688
Goodwill	46,773	46,773
Intangible assets	12,893	13,549
Restricted cash, long-term portion	—	1,137
Other assets	27,972	24,117
	<u>\$ 661,655</u>	<u>\$ 753,993</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	26,948	\$ 37,312
Accrued compensation	13,130	26,996
Warranty	4,609	5,229
Income taxes	1,474	3,906
Deferred revenue	34,928	28,811
Current portion of long-term debt	—	74,217
Other current liabilities	8,765	13,670
Total current liabilities	<u>89,854</u>	<u>190,141</u>
Long-term debt	77,624	76,887
Long-term deferred revenue	3,427	5,054
Other long-term liabilities	6,878	4,349
Stockholders' equity		
Preferred stock	—	—
Common stock	102	101
Additional paid-in capital	472,477	469,967
Treasury stock	(1,218)	(1,218)
Retained earnings	12,255	9,583
Accumulated other comprehensive gain (loss)	256	(871)
	<u>483,872</u>	<u>477,562</u>
	<u>\$ 661,655</u>	<u>\$ 753,993</u>

See accompanying Notes to Consolidated Financial Statements

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

	Three months ended March 31,	
	2007	2006
Operating activities		
Net income	\$ 2,672	\$ 545
Adjustments required to reconcile net income to net cash used for operating activities		
Depreciation and amortization	4,460	4,339
Amortization of intangible assets	656	612
Accretion of premium on long-term debt	737	—
Stock compensation expense	1,081	1,263
Undistributed income of SEN	(4,667)	(2,216)
Changes in operating assets & liabilities		
Accounts receivable	(6,346)	(12,027)
Inventories	(13,587)	(16,427)
Other current assets	(6,624)	(2,014)
Accounts payable & other current liabilities	(29,342)	—
Deferred revenue	4,490	1,762
Income taxes	(2,426)	(158)
Cash dividend from SEN	5,677	—
Other assets and liabilities	(3,501)	(2,309)
Net cash used for operating activities	(46,720)	(26,630)
Investing activities		
Purchases of marketable securities	—	(19,022)
Sales and maturities of marketable securities	29,200	32,763
Expenditures for property, plant & equipment	(3,649)	(886)
Increase in restricted cash	(39)	(222)
Net cash provided by investing activities	25,512	12,633
Financing activities		
Repayment of convertible debt	(74,217)	—
Proceeds from the exercise of stock options	394	1,202
Proceeds from employee stock purchase plan	585	611
Net cash (used for) provided by financing activities	(73,238)	1,813
Effect of exchange rate changes on cash	(593)	(11)
Net decrease in cash and cash equivalents	(95,039)	(12,195)
Cash and cash equivalents at beginning of period	140,451	71,417
Cash and cash equivalents at end of period	<u>\$ 45,412</u>	<u>\$ 59,222</u>

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 producer of ion implantation, dry strip, thermal processing and curing equipment used in the fabrication of semiconductors 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.

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, 2006 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, 2006.

Note 2. Stock-Based Compensation

2000 Stock Plan

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

2000 Plan originally reserved 18.5 million shares of common stock for future grant, which amount was subsequently increased to 33.2 million shares of common stock. The 2000 Plan expires in 2012. At March 31, 2007 there were 18.3 million shares of common stock available for future grant. At March 31, 2007 and 2006, stock awards outstanding under the 2000 Plan included stock options, restricted stock, and restricted stock units.

Expiration of non-qualified stock options or stock appreciation rights is based on award agreements. Non-qualified stock options typically expire ten years from date of grant, but, if approved by the Board of Directors, may have a stated term in excess of ten years. Incentive stock option awards expire ten years from the date of grant. Generally, options granted to employees terminate upon termination of employment. Under the terms of the 2000 Plan, the exercise price, determined by the Board of Directors, may not be less than the fair market value of a share of the Company's common stock on the date of grant. Stock options granted to employees generally vest over a period of four years while stock options granted to non-employee members of the Company's Board of Directors generally vest over a period of six months and, once vested, are not affected by the director's termination of service to the Company. The Company settles stock option exercises with newly issued common shares.

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Generally, unvested restricted stock and restricted stock unit awards expire upon termination of service to the Company. Restricted stock or restricted stock unit awards granted to employees generally vest over a period of four years while restricted stock or restricted stock units granted to members of the Company's Board of Directors generally vest over a period of six months. The Company plans to settle restricted stock units upon vesting with newly issued common shares.

Under the 2000 Plan, fair market value is defined as the closing price of a share of the common stock on the Nasdaq Global Market, as of any applicable date, as long as the Company's shares are traded on such exchange.

The amount of stock-based compensation recognized during a period is based on the value of the portion of the awards that are ultimately expected to vest. SFAS 123R requires forfeitures to be estimated at the time of grant and the estimates to be revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The term "forfeitures" is distinct from "cancellations" or "expirations" and represents only the unvested portion of the surrendered stock-based award. The Company currently expects, based on a historical analysis, a forfeiture rate of 10% per year, except for executive officer awards, which are expected to forfeit at a rate of 5% per year.

Under SFAS No. 123R the Company recognized stock-based compensation expense of \$1.1 million and \$1.3 million for the three months ended March 31, 2007 and 2006, respectively. SFAS No. 123R also requires the benefits of tax deductions in excess of recognized compensation cost to be reported as a financing cash flow, rather than as an operating cash flow. Because the Company does not recognize the benefit of tax deductions in excess of recognized compensation cost due to its cumulative net operating loss position, the adoption of SFAS No. 123R had no impact on the Company's consolidated statement of cash flows as of and for the three months ended March 31, 2007 and 2006.

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Grant-Date Fair Value

The Company uses the Black-Scholes option pricing model to calculate the grant-date fair value of an award. The fair values of options outstanding during the periods shown were calculated using the following assumptions:

	<u>Three months ended March 31, 2007</u>	<u>Three months ended March 31, 2006</u>
Weighted-average expected volatility	57.0%	59.0%
Weighted-average expected term (in years)	4.2	4.2
Risk-free interest rate	4.5-4.7%	4.3-4.5%
Expected dividend yield	0%	0%

Expected volatility—The Company considers a number of factors when estimating volatility under the pricing model. For options granted prior to fiscal 2006, the Company used historical volatility to estimate the grant-date fair value of stock options. The Company's current method of estimating expected volatility for all stock options relies on a combination of historical and implied volatility. The Company currently believes that the use of this blended volatility results in a more accurate estimate of the grant-date fair value of employee stock options because it more accurately reflects the market's current expectations of future volatility.

Expected term—Weighted average expected term was calculated using a forward looking lattice model of the Company's stock price incorporating a suboptimal exercise factor and a projected post-vest forfeiture rate.

Risk-free interest rate—The yield on zero-coupon U.S. Treasury securities for a period that is commensurate with the expected term assumption is used as the risk-free interest rate.

Expected dividend yield—Expected dividend yield was not considered in the option pricing formula since the Company does not pay dividends and has no current plans to do so in the future.

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Stock Options

The following table summarizes the stock option activity for the three months ended March 31, 2007:

	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at December 31, 2006	12,805	\$ 11.68		
Granted	8	6.70		
Exercised	(68)	5.80		
Canceled	(19)	6.42		
Expired	(695)	11.51		
Outstanding at March 31, 2007	<u>12,031</u>	<u>\$ 11.74</u>	<u>5.12</u>	<u>\$ 5,414</u>
Exercisable at March 31, 2007	<u>10,569</u>	<u>\$ 12.48</u>	<u>4.74</u>	<u>\$ 3,464</u>
Options Vested or Expected to Vest at March 31, 2007 (1)	<u>11,902</u>	<u>\$ 11.80</u>	<u>5.16</u>	<u>\$ 1,950</u>

(1) In addition to the vested options, the Company expects a portion of the unvested options to vest at some point in the future. Options expected to vest is calculated by applying an estimated forfeiture rate to the unvested options.

The total intrinsic value of options exercised during the three months ended March 31, 2007 and 2006 was \$0.1 and \$0.2 million, respectively. The total fair value of stock options vested during each of the three months ended March 31, 2007 and 2006 was \$0.1 million. As of March 31, 2007, there was \$3.1 million of total forfeiture adjusted unrecognized compensation cost related to non-vested stock options granted under the 2000 Plan. That cost is expected to be recognized over a weighted-average period of 1.8 years. Cash received from stock option exercises was \$0.4 and \$1.2 million during the three months ended March 31, 2007 and 2006, respectively.

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Restricted Stock and Restricted Stock Units

Restricted stock units ("RSUs") represent the Company's unfunded and unsecured promise to issue shares of the common stock at a future date, subject to the terms of the RSU Award Agreement and the 2000 Plan. The purpose of these awards is to assist in attracting and retaining highly competent employees and directors and to act as an incentive in motivating selected employees and directors to achieve long-term corporate objectives. The fair value of restricted stock unit and restricted stock awards is charged to expense ratably over the requisite service period.

Changes in the Company's non-vested restricted stock and restricted stock units for the three months ended March 31, 2007 follow:

	Shares/units	Weighted- Average Grant Date Fair Value per Share
Outstanding at December 31, 2006	1,831	\$ 6.44
Granted	1	7.69
Vested	(50)	6.00
Forfeited	(14)	6.42
Outstanding at March 31, 2007	<u>1,768</u>	<u>6.93</u>

The fair value of the Company's restricted stock and restricted stock units was calculated based upon the fair market value of the Company's stock at the date of grant. As of March 31, 2007, there was \$7.3 million of total forfeiture adjusted unrecognized compensation cost related to nonvested restricted stock and restricted stock units, which is expected to be amortized over a weighted average amortization period of 2.77 years.

Employee Stock Purchase Plan

The Employee Stock Purchase Plan (the "Purchase Plan") provides effectively all Axcelis employees the opportunity to purchase common stock of the Company at less than market prices. Purchases are made through payroll deductions of up to 10% of the employee's salary, subject to certain caps set forth in the Purchase Plan. Employees may purchase Axcelis common stock at 85% of the market value of the Company's common stock on the day the stock is purchased. The purchase price may be adjusted by a committee of the Board of Directors.

Compensation expense is computed as the benefit of discounted stock price, amortized to compensation expense straight-line over each offering period of six months. Compensation expense for each of the three months ended March 31, 2007 and 2006 was \$0.1 million. As of March 31, 2007, there were a total of 4.1 million shares reserved for issuance and available for purchase under the Purchase Plan. There were 0.2 million shares purchased under the Purchase Plan during the three months ended March 31, 2007.

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 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. In addition, 3.9 million shares and 6.3 million shares of common stock for the assumed conversion of the Company's convertible debt for the three months ended March 31, 2007 and 2006, respectively, 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, restricted stock awards, and conversions 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 March 31,	
	2007	2006
	(in thousands, except per share data)	
Income available to common stockholders	\$ 2,672	\$ 545
Weighted average common shares outstanding used in computing basic net income per share	101,492	100,883
Incremental shares	929	940
Weighted average common shares outstanding used in computing diluted net income per share	102,421	101,823
Net income per share		
Basic	\$ 0.03	\$ 0.01
Diluted	0.03	0.01

Note 4. Comprehensive Income

The components of comprehensive income follow:

	Three months ended March 31,	
	2007	2006
	(in thousands)	
Net income	\$ 2,672	\$ 545
Other comprehensive income		
Foreign currency translation adjustments	1,125	1,373
Unrealized gain on marketable securities	2	9
Comprehensive income	\$ 3,799	\$ 1,927

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Note 5. Inventories

The components of inventories follow:

	March 31,	December 31,
	2007	2006
	(in thousands)	
Raw materials	\$ 104,082	\$ 93,197
Work-in-process	42,072	44,587
Finished goods (completed systems)	27,813	22,323
	\$ 173,967	\$ 160,107

Note 6. 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. 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.

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

	Three months ended March 31,	
	2007	2006
	(in thousands)	
Balance at December 31	\$ 6,472	\$ 7,166
Warranties issued during the period	1,136	1,739
Settlements made during the period	(1,447)	(1,744)
Changes in liability for pre-existing warranties during the period	(297)	(1,511)
Balance at March 31	<u>\$ 5,864</u>	<u>\$ 5,650</u>
Amount classified as current	\$ 4,609	\$ 4,910
Amount classified as long-term	1,255	740
Balance at March 31	<u>\$ 5,864</u>	<u>\$ 5,650</u>

Note 7. 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"). Expenses associated with the offering of approximately \$3.6 million were deferred and amortized over the term of the Old Notes to interest expense using the straight-line method, which approximates the effective interest rate method.

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%.

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 accordance with the Financial Accounting Standards Board's Emerging Issues Task Force Issue No. 96-19, "Debtor's Accounting for a Modification or Exchange of Debt Instruments", the Company considered the terms of the New Notes to be "substantially different" from the terms of the Old Notes. As such, the Company wrote off approximately \$0.2 million of debt issuance costs related to the Old Notes to interest expense during the year ended December 31, 2006. 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.

Note 8. Income Taxes

In June 2006, the FASB issued Financial Interpretation No. 48, "Accounting for Uncertainty in Income Taxes" (FIN 48), which clarifies the accounting for uncertainty in income taxes recognized in a company's financial statements in accordance with FASB Statement No. 109, "Accounting for Income Taxes." The interpretation prescribes a recognition threshold and measurement attribute criteria for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The interpretation also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

The Company and its subsidiaries file income tax returns in the U.S. federal jurisdiction, and various states and foreign jurisdictions. The Company and all foreign subsidiaries are subject to income tax examinations by tax authorities for all years dating back to 2001. The Company's policy is to recognize interest related to unrecognized tax benefits as interest expense and penalties as operating expenses. Accrued interest and penalties are insignificant at March 31, 2007. The Company believes that it has appropriate support for the income tax positions taken and to be taken on its tax returns and that its accruals for tax liabilities are adequate for all open years based on an assessment of many factors including past experience and interpretations of tax law applied to the facts of each matter.

The Company adopted the provisions of FIN 48 on January 1, 2007. The adoption of FIN 48 did not impact the consolidated financial condition, results of operations or cash flows. At January 1, 2007, the Company had unrecognized tax benefits of approximately \$5.1 million, of which approximately \$2.8 million has reduced the Company's deferred tax assets and the offsetting valuation allowance and of which \$2.3 million is included in other long-term liabilities. The Company does not anticipate any significant change in these unrecognized tax benefits in 2007. To the extent these unrecognized tax benefits are ultimately recognized, they will impact the effective tax rate in a future period.

At December 31, 2006, the Company had \$108.5 million of deferred tax assets relating to net operating loss carryforwards, tax credit carryforwards and other temporary differences (principally in the United States, Europe, and Asia), which are available to reduce income taxes in future years. SFAS No. 109 "Accounting for Income Taxes" requires that a valuation allowance be established when it is "more likely than not" that all or a portion of deferred tax assets will not be realized. A review of all available positive and negative evidence needs to be considered, including a company's performance, the market environment in which the company operates, length of carryback and carryforward periods, existing sales backlog, and projections of future operating results. Where there are cumulative losses in recent years, SFAS No. 109 creates a strong presumption that a valuation allowance is needed. This presumption can be overcome in very limited circumstances.

In 2003, the Company entered a three-year cumulative loss position and revised its projections of the amount and timing of profitability in future periods. As a result, the Company increased its valuation allowance to increase the carrying value of deferred tax assets to zero.

The Company will maintain a valuation allowance on future tax benefits for entities with net operating loss carryforwards until they can sustain an appropriate level of profitability. However, going forward should the Company's return to profitability provide sufficient evidence, in accordance with the provisions of SFAS No. 109, to support the ultimate realization of income tax benefits attributable to net operating losses, tax credit carryforwards, and other deductible temporary differences, a reduction in the valuation allowance may be recorded and the carrying value of deferred tax assets may be restored, resulting in a non-cash credit to earnings.

Note 9. Significant Customers

In the three months ended March 31, 2007, one customer accounted for approximately 19% of revenue and one other customer accounted for approximately 14% of revenue. In the three months ended March 31, 2006, one customer accounted for approximately 11% of revenue. For the three months ended March 31, 2007 and 2006, no other customer accounted for more than 10% of revenue.

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Note 10. Contingencies

Litigation

From time to time, the Company may be subject to legal proceedings and claims arising from the conduct of its business including litigation related to intellectual property matters, customer contract matters, employment claims and environmental matters. At March 31, 2007, the Company is not a party to any material legal proceedings.

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.

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Note 12. Recent Accounting Pronouncements

SFAS 158

In September 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standard (SFAS) No. 158, *Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans — An Amendment of FASB Statements No. 87, 88, 106, and 132R* (SFAS 158). SFAS 158 requires sponsoring employers to recognize the funded status of pension and other postretirement benefit plans on their balance sheets and to recognize changes in the funded status in the year the changes occur. It also requires the measurement date of plan assets and obligations to occur at the end of the employer's fiscal year. SFAS 158 is effective for the Company at the end of fiscal 2006, except for the change in measurement date, which is effective for the Company in fiscal 2007. The adoption of SFAS 158 did not impact the Company's financial condition, results of operations or liquidity and is not expected to have a material impact in future periods.

FIN 48

In June 2006, the FASB issued FASB Interpretation No. 48, *Accounting for Uncertainty in Income Taxes — an interpretation of FASB Statement No. 109* (FIN 48). FIN 48 clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements in accordance with SFAS 109, *Accounting for Income Taxes*. FIN 48 prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. FIN 48 also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. FIN 48 is effective for fiscal years beginning after December 15, 2006. The adoption of FIN 48 did not have a material impact on the Company's financial condition, results of operations or liquidity.

SFAS No. 157

In September 2006, the FASB issued SFAS No. 157, *Fair Value Measurements*, which defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. Where applicable, this Statement simplifies and codifies related guidance within generally accepted accounting principles (GAAP). This statement is effective for financial statements issued for fiscal years beginning after November 15, 2007, and interim periods within those fiscal years. The Company is currently analyzing the expected impact from adopting this statement but currently does not believe its adoption will have a significant impact on the financial position or results of operations of the Company.

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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” 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, dry strip, thermal processing and curing 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. 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 has in the past been 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. Our gross margins are also affected by the introduction of new products. We typically become more efficient in manufacturing products as they mature. For example, our gross margins in 2002, 2003 and 2004 were adversely affected in part as a result of the increased proportion of relatively new systems sold to process 300mm wafers. We expect gross margins to continue to be under substantial pressure in the second half of 2007 due to sales of our single wafer implant products. Our 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 joint venturing 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.

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The years 2005 and 2006 were transition years in implant products and technology. While customers continue to buy multi-wafer tools, many customers have shifted primarily to single wafer tools for high current applications. Because we did not have a single wafer high current product, we experienced a significant loss of market share in 2005. We introduced our single wafer Optima MD product (for medium current applications) in 2005 and our single wafer Optima HD product (for high current applications) in 2006. Our single wafer tool for high energy applications is scheduled to be released in the second half of 2007. We expect these new single wafer products will enable us to regain market share in 2007 and future years.

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.

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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 March 31, 2007 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, 2006.

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Results of Operations

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

	Three months ended	
	March 31,	
	<u>2007</u>	<u>2006</u>
Revenue		
Systems	52.4%	53.5%
Services	45.5	45.0
Royalties, primarily from SEN	2.1	1.5
	<u>100.0</u>	<u>100.0</u>
Cost of revenue	<u>57.7</u>	<u>60.1</u>
Gross profit	42.3	39.9
Other costs and expenses		
Research & development	18.7	18.6
Selling	13.3	10.8
General & administrative	10.7	11.1
Amortization of intangible assets	0.7	0.6
Restructuring	—	(0.3)
	<u>43.4</u>	<u>40.8</u>
Income (loss) from operations	(1.1)	(1.0)
Other income (expense)		
Equity income of SEN	4.8	2.3
Interest income	1.5	1.7
Interest expense	(1.7)	(1.7)
Other-net	—	(0.7)
	<u>4.6</u>	<u>1.6</u>
Income (loss) before income taxes	3.5	0.6
Income taxes (credit)	0.8	0.1
Net income	<u>2.7%</u>	<u>0.6%</u>

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Three months ended March 31, 2007 in comparison to the three months ended March 31, 2006

Revenue

Revenue from system sales was \$51.1 million, or 52.4% of revenue for the first quarter of 2007, compared with \$52.4 million, or 53.5% of revenue for the first quarter of 2006.

Approximately 32.4% of revenue from system sales for the three months ended March 31, 2007 was from the sale of 200mm products and 67.6% of revenue was from the sale of 300mm products, compared with 45.8% and 54.2%, respectively, for the three months ended March 31, 2006. This highlights the overall market trend towards 300mm products.

Services revenue, which includes spare parts, equipment upgrades and maintenance services, was \$44.4 million, or 45.5% of revenue for the first quarter of 2007, compared with \$44.1 million, or 45.0% of revenue, for the first quarter of 2006. Services revenue fluctuates period to period based mainly on capacity utilization at customers' manufacturing facilities which affects the sale of spare parts.

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 March 31, 2007 and 2006 was \$38.4 million and \$43.1 million, respectively.

Royalty revenue was \$2.1 million, or 2.1% of revenue for the first quarter of 2007, compared with \$1.4 million, or 1.5% of revenue for the first quarter of 2006. Royalties are primarily earned under the terms of our license agreement with SEN. Royalty revenue changes are mainly attributable to fluctuations in SEN sales volume based on demand for equipment by Japanese semiconductor manufacturers and the timing of revenue recognition on shipments in Japan.

Revenue from sales of ion implantation products and services accounted for \$74.1 million, or 76.0% of total revenue in the first quarter of 2007, compared with \$76.3 million, or 77.9%, of total revenue in the first quarter of 2006. We expect annual revenues from the sale of ion implantation products and services to average from 70% to 80% of total revenues.

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Gross Profit

Gross profit was 42.3% of revenue in the first quarter of 2007, compared with gross profit of 39.9% of revenue in the first quarter of 2006. The gross profit increase of 2.4 percentage points was the result of favorable systems volume, mix and deferrals (approximately 2.7 percentage points), higher 100% margin SEN royalties (approximately 0.6 percentage points), and favorable parts and service volume (approximately 1.1 percentage points), offset by unfavorable manufacturing overhead expense (approximately 2.0 percentage points).

Research and Development

Research and development expense was \$18.2 million in the first quarter of 2007, unchanged from the first quarter of 2006. Increased development asset amortization and depreciation (\$0.5 million) was offset by decreased payroll expenses (\$0.4 million). We expect research and development spending to remain at this level throughout 2007 as the Company continues to invest heavily in new product development.

Research and development expense was attributable to the following activities in the first quarter of 2007: 59% for new product development, 28% for improvement of existing products, and 13% for product testing.

Selling

Selling expense was \$12.9 million in the first quarter of 2007, an increase of \$2.3 million, or 21.7%, compared with \$10.6 million in the first quarter of 2006. The increase was driven primarily by increased costs related to evaluation system support for our Optima platform (\$1.1 million), increased payroll costs (\$0.7 million) and higher commission and variable compensation (\$0.4 million) expenses.

General and Administrative

General and administrative expense was \$10.5 million in the first quarter of 2007, a decrease of \$0.4 million or 3.7% compared with \$10.9 million in the first quarter of 2006. This decrease was driven primarily by reduced stock compensation expense (\$0.4 million).

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Other Income (Expense)

Equity income attributable to SEN was \$4.7 million in the first quarter of 2007, compared to \$2.2 million in the first quarter of 2006. Fluctuations in equity income from SEN reflect changes in its sales volume and net income resulting from demand changes in the Japanese semiconductor market, and the timing of shipments in Japan.

Interest income of \$1.5 million primarily relates to interest earned on cash, cash equivalents and short-term investments. Interest income decreased by \$0.2 million from the comparable period in 2006 due primarily to lower average cash balances, resulting from the repayment of \$74.2 million of long term debt in January 2007.

Interest expense of \$1.7 million in the first quarter of 2007, an increase of \$0.1 million from the comparable period in 2006, relates primarily to outstanding convertible senior subordinated notes which have an effective yield to maturity of 8%.

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Income Taxes

Income tax expense in the first quarter of 2007 was \$0.7 million. Income tax expense relates 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 8 to the consolidated financial statements. Accordingly, our effective income tax rate is not meaningful.

Liquidity and Capital Resources

Cash, cash equivalents, and marketable securities at March 31, 2007 were \$79.4 million, compared with \$203.7 million at December 31, 2006. The \$124.3 million decrease in cash, cash equivalents, and marketable securities was mainly attributable to (1) the repayment of \$74.2 million for the Company's 4.25% Convertible Subordinated Notes and (2) cash used by operations. Cash used in operations was driven primarily by an increase in accounts receivable (\$6.3 million) caused by the timing of systems shipments, increased inventories (\$13.6 million) primarily to support the Optima product line, a decrease in accounts payable (\$10.4 million), capital expenditures (\$3.6 million) and the reduction in accrued compensation (\$13.9 million) primarily due to the payout of the 2006 variable compensation plan and funding of the 2006 401k company match. We expect to generate positive cash flow for the year ending December 31, 2007.

Capital expenditures were \$3.6 million and \$0.9 million for the first quarters of 2007 and 2006, respectively. We have no significant capital projects planned for 2007 and total capital expenditures for 2007 are projected to be less than \$10.0 million. Future capital expenditures beyond 2007 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 \$75.8 million at December 31, 2006. These carryforwards, which expire principally between 2018 and 2025, are available to reduce future income tax liabilities in the United States and certain foreign jurisdictions.

We had a \$50.0 million revolving credit facility that expired in October 2006. We are currently evaluating the need for a new credit facility and anticipate entering into a similar arrangement in 2007.

In 2006, Axcelis and Sumitomo Heavy Industries 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.

As discussed in note 7 to the consolidated financial statements, 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 believe that our existing cash balances and expected positive cash flows for 2007 and 2008 will allow us to repay the New Notes when they mature in 2009 without causing a liquidity issue.

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We have outstanding standby letters of credit, bank guarantees and surety bonds in the amount of \$17.4 million to support certain operating lease obligations, workers' compensation insurance, and certain value added tax claims in Europe. At March 31, 2007, \$12.2 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. We also have foreign exchange contracts used to hedge amounts receivable from SEN (\$3.1 million at March 31, 2007).

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

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.

On May 2, 2007, we announced that our revenues for the second quarter of 2007 are forecast in the range of \$108 million to \$118 million. Gross margins are projected to remain in the low 40's. We expect results of operations will be in the range of \$0.03 to \$0.07 per diluted share.

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 March 31, 2007, 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, 2006.

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 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 under the Exchange Act) identified in connection with the evaluation of our internal control that occurred during our first quarter of 2007 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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PART II - OTHER INFORMATION

Item 1. Legal Proceedings.

We are not a party to any material legal proceedings.

Item 1A. Risk Factors.

As of March 31, 2007, 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, 2006.

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.

None.

Item 5. Other Information.

None.

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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 January 23, 2002. Incorporated by reference to Exhibit 3.2 of the Company's Form 10-K for the year ended December 31, 2001, filed with the Commission on March 12, 2002.
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.
4.1	Specimen Stock Certificate, Incorporated by reference to Exhibit 4.1 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
4.2	Rights Agreement between the Company and EquiServe Trust Company, N.A. Incorporated by reference to Exhibit 4.1 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
4.3	Indenture between the Company and U.S. Bank National Association, as trustee, including the form of note, dated as of May 2, 2006. Incorporated by reference to Exhibit 4.12 of the Company's Report on Form 8-K filed with the Commission on May 4, 2006.
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 May 9, 2007. 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 May 9, 2007. 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 May 9, 2007. 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 May 9, 2007. Filed herewith.

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SIGNATURES

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

AXCELIS TECHNOLOGIES, INC.

/s/ Stephen G. Bassett

DATED: May 9, 2007

By: Stephen G. Bassett, Executive Vice President and Chief
Financial Officer
Duly authorized officer and Principal Financial Officer

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: May 9, 2007

/s/ Mary G. Puma

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

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: May 9, 2007

/s/ Stephen G. Bassett

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

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 May 9, 2007.

/s/ Mary G. Puma

Mary G. Puma

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

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 May 9, 2007.

/s/ Stephen G. Bassett

Stephen G. Bassett

Executive Vice President and Chief Financial Officer of

Axcelis

Technologies, Inc.
