UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2016

Or

oTRANSITION 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 has submitted electronically and posted on its corporate Web site, if 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 ☐.

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

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

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

As of August 4, 2016 there were 29,158,172 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, 2016	Three months ended June 30, 2015	Six months ended June 30, 2016	Six months ended June 30, 2015
Revenue:				
Product	$ 58,859	$ 72,748	$ 121,034	$ 140,278
Services	5,592	5,689	10,938	11,442
Total revenue	64,451	78,437	131,972	151,720
Cost of revenue:				
Product	34,638	46,560	74,902	91,745
Services	4,682	4,703	8,523	9,421
Total cost of revenue	39,320	51,263	83,425	101,166
Gross profit	25,131	27,174	48,547	50,554
Operating expenses:				
Research and development	8,478	7,899	17,114	16,098
Sales and marketing	5,790	5,858	11,750	11,486
General and administrative	6,232	6,231	12,274	12,332
Restructuring charges	—	8	282	18
Total operating expenses	20,500	19,996	41,420	39,934
Income from operations	4,631	7,178	7,127	10,620
Other (expense) income:				
Interest income	54	6	108	9
Interest expense	(1,338)	(1,310)	(2,385)	(2,353)
Other, net	(238)	49	(297)	(384)
Total other (expense) income	(1,522)	(1,255)	(2,574)	(2,728)
Income before income taxes	3,109	5,923	4,553	7,892
Income tax provision (benefit)	172	40	(332)	141
Net income	$ 2,937	$ 5,883	$ 4,885	$ 7,751
Net income per share:				
Basic	$ 0.10	$ 0.21	$ 0.17	$ 0.27
Diluted	$ 0.10	$ 0.20	$ 0.16	$ 0.26
Shares used in computing net income per share:				
Basic weighted average common shares	29,097	28,446	29,066	28,367
Diluted weighted average common shares	30,701	30,153	30,607	29,975

See accompanying Notes to these Consolidated Financial Statements

Axcelis Technologies, Inc.
Consolidated Statements of Comprehensive Income
(In thousands)
(Unaudited)

	Three months ended June 30,		Six months ended June 30,	
	2016	**2015**	**2016**	**2015**
Net income	$ 2,937	$ 5,883	$ 4,885	$ 7,751
Other comprehensive (loss) income:				
Foreign currency translation adjustments	(456)	329	593	(681)
Amortization of actuarial gains from pension plan	26	19	52	38
Total other comprehensive (loss) income	(430)	348	645	(643)
Comprehensive income	$ 2,507	$ 6,231	$ 5,530	$ 7,108

See accompanying Notes to these Consolidated Financial Statements

Axcelis Technologies, Inc.
Consolidated Balance Sheets
(In thousands, except per share amounts)
(Unaudited)

	June 30, 2016	December 31, 2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 60,981	$ 78,889
Accounts receivable, net	63,482	36,868
Inventories, net	110,582	109,408
Prepaid expenses and other current assets	7,658	4,792
Total current assets	242,703	229,957
Property, plant and equipment, net	31,057	30,031
Long-term restricted cash	6,862	6,936
Other assets	18,666	14,860
Total assets	$ 299,288	$ 281,784
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 26,836	$ 19,849
Accrued compensation	5,935	9,059
Warranty	2,958	3,363
Income taxes	196	143
Deferred revenue	13,781	7,863
Other current liabilities	4,584	4,091
Total current liabilities	54,290	44,368
Sale leaseback obligation	47,586	47,586
Long-term deferred revenue	650	679
Other long-term liabilities	4,950	5,387
Total liabilities	107,476	98,020
Commitments and contingencies (Note 14)		
Stockholders' equity:		
Preferred stock, $0.001 par value, 30,000 shares authorized; none issued or outstanding	—	—
Common stock, $0.001 par value, 75,000 shares authorized; 29,134 shares issued and outstanding at June 30, 2016; 29,025 shares issued and 28,995 shares outstanding at December 31, 2015	29	29
Additional paid-in capital	530,389	529,089
Treasury stock, at cost, no shares at June 30, 2016 and 30 at December 31, 2015	—	(1,218)
Accumulated deficit	(337,820)	(342,705)
Accumulated other comprehensive loss	(786)	(1,431)
Total stockholders' equity	191,812	183,764
Total liabilities and stockholders' equity	$ 299,288	$ 281,784

See accompanying Notes to these Consolidated Financial Statements

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

	Six months ended June 30, 2016	Six months ended June 30, 2015
Cash flows from operating activities		
Net income	$ 4,885	$ 7,751
Adjustments to reconcile net income to net cash (used in) provided by operating activities:		
Depreciation and amortization	2,061	2,298
Deferred taxes	480	97
Stock-based compensation expense	2,079	3,055
Provision for excess and obsolete inventory	815	537
Changes in operating assets & liabilities:		
Accounts receivable	(26,448)	516
Inventories	(1,540)	(19,381)
Prepaid expenses and other current assets	(3,054)	(2,205)
Accounts payable and other current liabilities	3,721	21,213
Deferred revenue	5,875	1,671
Income taxes	50	104
Other assets and liabilities	(5,629)	(3,888)
Net cash (used in) provided by operating activities	(16,705)	11,768
Cash flows from investing activities		
Expenditures for property, plant and equipment	(1,859)	(672)
Net cash used in investing activities	(1,859)	(672)
Cash flows from financing activities		
Decrease in restricted cash	74	760
Financing fees and other expenses	(117)	(847)
Principal payments on term loan	—	(14,530)
Principal payments on sale leaseback obligation	—	(392)
Proceeds from sale leaseback obligation	—	48,940
Proceeds from exercise of stock options	556	1,665
Proceeds from Employee Stock Purchase Plan	—	213
Net cash provided by financing activities	513	35,809
Effect of exchange rate changes on cash and cash equivalents	143	427
Net (decrease) increase in cash and cash equivalents	(17,908)	47,332
Cash and cash equivalents at beginning of period	78,889	30,753
Cash and cash equivalents at end of period	$ 60,981	$ 78,085
Supplemental disclosure of total cash, cash equivalents and restricted cash:		
Cash and cash equivalents at end of period	$ 60,981	$ 78,085
Restricted cash at end of period	6,862	65
Total cash, cash equivalents and restricted cash at end of period	$ 67,843	$ 78,150

See accompanying Notes to these Consolidated Financial Statements

Axcelis Technologies, Inc.
Notes to Consolidated Financial Statements (Unaudited)

Note 1. Nature of Business

Axcelis Technologies, Inc. (“Axcelis” or the “Company”) was incorporated in Delaware in 1995, and is a worldwide producer of ion implantation 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, used equipment and maintenance services to the semiconductor industry.

The accompanying unaudited consolidated financial statements have been prepared in accordance with U.S. 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 and considered necessary for a fair presentation of these financial statements 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, 2015 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, 2015.

Note 2. Correction of Accounting Error in Prior Period

Subsequent to March 31, 2016, but prior to filing this Form 10-Q for the quarter ended June 30, 2016, the Company discovered a cumulative error associated with the elimination of profits on sales of inventory to its subsidiaries. This error had no impact upon the Company’s consolidated statement of operations or consolidated statement of cash flows subsequent to the year ended December 31, 2010. The following financial statement line items reported in the Company’s consolidated balance sheets for the years ended December 31, 2015 and 2014 were affected by the correction of this accounting error:

(in thousands)	**Previously Reported December 31, 2015**	**Adjusted December 31, 2015**	**Effect of Change**
Inventory, net	$ 115,904	$ 109,408	$ (6,496)
Total current assets	236,453	229,957	(6,496)
Total assets	288,280	281,784	(6,496)
Accumulated deficit	(336,209)	(342,705)	(6,496)
Total stockholders' equity	190,260	183,764	(6,496)
Total liabilities and stockholders' equity	$ 288,280	$ 281,784	$ (6,496)

(in thousands)	**Previously Reported December 31, 2014**	**Adjusted December 31, 2014**	**Effect of Change**
Inventory, net	$ 104,063	$ 97,567	$ (6,496)
Total current assets	185,135	178,639	(6,496)
Total assets	227,654	221,158	(6,496)
Accumulated deficit	(350,887)	(357,383)	(6,496)
Total stockholders' equity	168,352	161,856	(6,496)
Total liabilities and stockholders' equity	$ 227,654	$ 221,158	$ (6,496)

This error was associated with transactions occurring prior to September 2010, at which time the Company revised its methodology to compute and eliminate intercompany profits. However, the Company failed to identify and record an entry to eliminate the cumulative error resulting from the prior methodology. This $6.5 million error resulted in an overstatement of inventory and a cumulative understatement of cost of product revenue as of September 2010. Thereafter, the effect was an overstatement of inventory and understatement of accumulative deficit for each subsequent reporting period. The consolidated balance sheets as of December 31, 2015 and 2014 have been revised to reflect the correction of the error through a decrease in inventory and an increase in accumulated deficit of $6.5 million. In the opinion of management, the effect is not material to the consolidated financial position or results of operations for any previously reported period. However, prior year amounts will be revised, as reflected above, in future filings.

Note 3. 1-for-4 Reverse Stock Split

As of 6:00 PM Eastern Time on June 30, 2016, the Company effected a 1-for-4 reverse stock split of its common stock. The Company continues to be traded under its unchanged symbol “ACLS.” All previously reported common stock share amounts in the accompanying financial statements and related notes have been retroactively adjusted to reflect the reverse stock split. As a result of the reduced number of shares outstanding after the reverse stock split, the stated capital attributable to common stock on the Company’s balance sheet (which consists of the unchanged $0.001 par value per share multiplied by the aggregate number of shares issued and outstanding), has been reduced. Correspondingly, the Company’s additional paid-in capital account, which consists of the difference between its stated capital and the aggregate amount paid to the Company upon issuance of all currently outstanding shares of its common stock, has been credited with the amount by which the stated capital was reduced. The Company’s stockholders’ equity, in the aggregate, remains unchanged.

Immediately prior to the effectiveness of the reverse stock split, the Company retired 120,000 shares of common stock held in treasury to the status of authorized and unissued.

Note 4. Stock-Based Compensation

The Company maintains the Axcelis Technologies, Inc. 2012 Equity Incentive Plan (the “2012 Equity Plan”), which became effective on May 2, 2012, and permits the issuance of options, restricted stock, restricted stock units and performance awards to selected employees, directors and consultants of the Company. The Company’s 2000 Stock Plan (the “2000 Stock Plan”), expired on May 1, 2012 and no new grants may be made under that plan after that date. However, unexpired awards granted under the 2000 Stock Plan remain outstanding and subject to the terms of the 2000 Stock Plan. The Company also maintains the Axcelis Technologies, Inc. Employee Stock Purchase Plan (the “ESPP”), an Internal Revenue Code Section 423 plan.

The 2012 Equity Plan and the ESPP are more fully described in Note 14 to the consolidated financial statements in the Company’s 2015 Annual Report on Form 10-K.

The Company recognized stock-based compensation expense of $1.2 million for the three-month period ended June 30, 2016. The Company recognized $1.9 million for the three-month period ended June 30, 2015, which included $1.1 million of expense due to accelerated vesting of equity awards as a result of stock price performance vesting terms. The Company recognized stock-based compensation expense of $2.1 million and $3.1 million for the six-month periods ended June 30, 2016 and 2015, respectively. These amounts include compensation expense related to restricted stock units, non-qualified stock options and stock to be issued to participants under the ESPP.

In the three-month and six-month periods ended June 30, 2016, the Company issued 0.1 million and 0.1 million shares of common stock, respectively, in connection with the exercise of stock options resulting in proceeds of $0.4 million and $0.6 million, respectively.

Note 5. Computation of Net Earnings per Share

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 by the number of additional common shares that would have been outstanding if the potentially dilutive common shares issuable for stock options, restricted stock units and employee stock purchase plan accounts had been issued, calculated using the treasury stock method. The earnings per share amounts presented within our financial statements and related notes and the related basic and diluted weighted average share amounts stated below have been revised to reflect the 1-for-4 reserve stock split described in Note 3 above.

The components of net earnings per share are as follows:

	Three months ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
	(in thousands, except per share data)			
Net income available to common stockholders	$ 2,937	$ 5,883	$ 4,885	$ 7,751
Weighted average common shares outstanding used in computing basic earnings per share	29,097	28,446	29,066	28,367
Incremental options and RSUs	1,604	1,707	1,541	1,608
Weighted average common shares outstanding used in computing diluted net earnings per share	30,701	30,153	30,607	29,975
Net earnings per share				
Basic	$ 0.10	$ 0.21	$ 0.17	$ 0.27
Diluted	$ 0.10	$ 0.20	$ 0.16	$ 0.26

Diluted weighted average common shares outstanding does not include options, awards and restricted stock units outstanding to purchase 0.9 million and 0.1 million common equivalent shares for the three-month periods ended June 30, 2016 and 2015, respectively, and does not include options and restricted stock units outstanding to purchase 0.9 million and 0.2 million common equivalent shares for the six-month periods ended June 30, 2016 and 2015, respectively, as their effect would have been anti-dilutive.

Note 6. Accumulated Other Comprehensive Loss

The following table presents the changes in accumulated other comprehensive income (loss), net of tax, by component for the six months ended June 30, 2016:

	Foreign currency	Defined benefit pension plan	Total
		(in thousands)	
Balance at December 31, 2015	$ (744)	$ (687)	$ (1,431)
Other comprehensive income and pension reclassification [(1)]	593	52	645
Balance at June 30, 2016	$ (151)	$ (635)	$ (786)

(1) The tax effect for pension reclassification was not material to the consolidated financial statements.

Note 7. Inventories, net

The components of inventories are as follows:

	June 30, 2016	December 31, 2015
	(in thousands)	
Raw materials	$ 73,636	$ 72,070
Work in process	28,399	29,219
Finished goods (completed systems)	8,547	8,119
	$ 110,582	$ 109,408

The value of raw materials shown for December 31, 2015, reflects the correction of an immaterial error discussed in Note. 2.

When recorded, inventory reserves are intended to reduce the carrying value of inventories to their 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 inventories 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. As of June 30, 2016 and December 31, 2015, inventories are stated net of inventory reserves of $9.6 million and $10.5 million, respectively.

Note 8. Product Warranty

The Company generally offers a one year warranty for all of its systems, 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.

The changes in the Company's standard product warranty liability are as follows:

	Six months ended June 30,	
	2016	2015
	(in thousands)	
Balance at January 1 (beginning of year)	$ 3,555	$ 1,526
Warranties issued during the period	1,551	2,230
Settlements made during the period	(2,399)	(1,020)
Changes in estimate of liability for pre-existing warranties during the period	520	344
Balance at June 30 (end of period)	$ 3,227	$ 3,080
Amount classified as current	$ 2,958	$ 2,886
Amount classified as long-term	269	194
Total warranty liability	$ 3,227	$ 3,080

Note 9. Restructuring Charges

In the first quarter of 2016, due to changes in customer service contracts resulting from a consolidation in our customer base, the Company had severance and other costs related to a reduction in force. Changes in the Company's restructuring liability, which consist primarily of payments made on obligations of severance and related costs (which obligations are included in amounts reported as other current liabilities), are as follows:

	(in thousands)
Balance at December 31, 2015	$ —
Severance and, related costs	282
Cash payments	(194)
Balance at June 30, 2016	$ 88

Note 10. Fair Value Measurements

Certain of the assets and liabilities on the Company's balance sheets are reported at their "fair value". Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date.

(a) Fair Value Hierarchy

The accounting guidance for fair value measurement requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard establishes a fair value hierarchy based on the level of independent, objective evidence surrounding the inputs used to measure fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The fair value hierarchy is as follows:

Level 1 - applies to assets or liabilities for which there are quoted prices in active markets for identical assets or liabilities.

Level 2 - applies to assets or liabilities for which there are inputs other than quoted prices that are observable for the asset or liability, such as quoted prices for similar assets or liabilities in active markets; quoted prices for identical assets or liabilities in markets with insufficient volume or infrequent transactions (less active markets); or model-derived valuations in which significant inputs are observable or can be derived principally from, or corroborated by, observable market data.

Level 3 - applies to assets or liabilities for which there are unobservable inputs to the valuation methodology that are significant to the measurement of the fair value of the assets or liabilities.

(b) Fair Value Measurements

The Company's money market funds are included in cash and cash equivalents in the consolidated balance sheets and are considered a level 1 investment as they are valued at quoted market prices in active markets. The Company's sale leaseback obligation relating to the sale of our corporate headquarters is carried at amortized cost, which approximates fair value based on an implied borrowing rate of 10.65%. The underlying cash flow associated with our lease payments is being applied to both an interest and principal component using the effective interest method over the associated lease term. The liability is categorized as level 3 within the fair value hierarchy.

The following table sets forth the Company's assets and liabilities by level within the fair value hierarchy:

	June 30, 2016 Fair Value Measurements			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Assets				
Cash equivalents:				
Money market funds	$43,815	$ —	$ —	$43,815
Liabilities				
Sale leaseback obligation	$ —	$ —	$47,586	$47,586

	December 31, 2015 Fair Value Measurements			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Assets				
Cash equivalents:				
Money market funds	$65,327	$ —	$ —	$65,327
Liabilities				
Sale leaseback obligation	$ —	$ —	$47,586	$47,586

(c) Other Financial Instruments

The carrying amounts reflected in the consolidated balance sheets for cash and cash equivalents (which are comprised primarily of deposit and investment accounts), accounts receivable, prepaid expenses and other current and non-current assets, accounts payable and accrued expenses approximate fair value due to their short-term maturities.

Note 11. Financing Arrangements

Sale Leaseback Obligation

On January 30, 2015, the Company sold its corporate headquarters facility to Beverly Property Owner LLC, an affiliate of Middleton Partners, based in Northbrook, Illinois, for the purchase price of $48.9 million. As part of the sale, the Company also entered into a 22-year lease agreement with Beverly Property Owner LLC. The sale leaseback is accounted for as a financing arrangement for financial reporting and, as such, the Company has recorded a financing obligation of $47.6 million as of June 30, 2016. The associated lease payments are deemed to include both an interest component and payment of principal, with the underlying liability being extinguished at the end of the original lease term. The Company posted a collateralized security deposit of $5.9 million in the form of an irrevocable letter of credit at the time of the closing. This letter of credit is cash collateralized and is classified as restricted cash as of June 30, 2016.

Note 12. Income Taxes

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

At December 31, 2015, the Company had $124.2 million of deferred tax assets worldwide relating to net operating loss carryforwards, tax credit carryforwards and other temporary differences, which are available to reduce income taxes in future years. The Company maintains a 100% domestic valuation allowance, reducing the carrying value of the deferred tax assets in the United States to zero. The Company will continue to maintain a full valuation allowance for those tax assets until accounting principles require the release of the allowance based on expectations of continuing profitability.

During the first quarter of 2016, the statute of limitations associated with a tax position previously taken by the Company expired. The related tax reserve of $0.6 million and accrued interest of $0.3 million that had been recorded were reversed during the six months ended June 30, 2016.

See Note 15 for the effect of the adoption of Accounting Standards Update No. 2015-17.

Note 13. Concentration of Risk

For the three months ended June 30, 2016, three customers accounted for 14.8%, 11.7% and 10.4% of consolidated revenue, respectively. For the six months ended June 30, 2016, two customers accounted for 16.4% and 14.1% of consolidated revenue, respectively.

For the three months ended June 30, 2015, two customers accounted for 29.9% and 10.0%, of consolidated revenue, respectively. For the six months ended June 30, 2015, one customer accounted for 33.1% of consolidated revenue.

At June 30, 2016, three customers accounted for 16.5%, 14.5% and 10.8% consolidated accounts receivable, respectively. At December 31, 2015, three customers accounted for 22.9%, 12.7% and 11.6% of consolidated accounts receivable, respectively.

Note 14. Contingencies

(a) Litigation

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

(b) 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 15. Recent Accounting Guidance

Accounting Standards or Updates Recently Adopted

In November 2015, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2015-17, "*Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes."* The amendments in this Update require that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position. They apply to all entities that present a classified statement of financial position. For public business entities, the amendments in this ASU are effective for financial statements issued for annual periods beginning after December 15, 2016, and interim periods within those annual periods. The Company adopted ASU No. 2015-17 early, effective June 30, 2016, on a prospective basis. As a result, we have presented all deferred tax assets and liabilities as noncurrent on our consolidated balance sheet as of June 30, 2016, reducing current deferred tax assets by $0.2 million, long-term deferred tax assets of $0.3 million and short-term deferred tax liabilities by $0.5 million. The current deferred tax assets and liabilities on our consolidated balance sheet as of December 31, 2015, have not been reclassified.

Accounting Standards or Updates Not Yet Effective

In May 2014, the FASB issued ASU No. 2014-09, *"Revenue from Contracts with Customers,"* which provides guidance for revenue recognition. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. In April 2016, the FASB issued ASU 2016-10, *"Revenue from Contracts with Customers" (Topic 606)*: *Identifying Performance Obligations and Licensing*, which further clarifies performance obligations in a contract with a customer. In May 2016, the FASB issued ASU 2016-12, "*Revenue from Contracts with Customers" (Topic 606): Narrow-Scope Improvements and Practical Expedients*, which provides a more narrow interpretation of ASU No. 2014-09. These ASUs are effective for annual reporting periods beginning after December 15, 2017 and interim periods within those annual periods. We are currently assessing the potential impact the adoption of these standards will have on our financial statements.

In July 2015, the FASB issued ASU No. 2015-11, *"Simplifying the Measurement of Inventory,"* which changes the inventory measurement principles for entities using the first-in, first-out (FIFO) or average cost methods. For entities utilizing one of these methods, the inventory measurement principle will change from lower of cost or market to the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less the reasonably predictable costs of completion, disposal and transportation. The amendments are effective for annual and interim periods beginning after December 15, 2016. We are currently assessing the potential impact the adoption of this standard will have on our financial statements.

In February 2016, the FASB issued ASU No. 2016-02 *"Leases."* The ASU requires lessees to recognize the rights and obligations created by most leases as assets and liabilities on their balance sheet and continue to recognize expenses on their income statement over the lease term. It will also require disclosures designed to give financial statement users information on the amount, timing, and uncertainty of cash flows arising from leases. The guidance is effective for annual reporting periods beginning after December 15, 2018, and interim periods within those years. Early adoption is permitted for all entities. We are currently evaluating the impact of ASU 2016-02 on the consolidated financial statements and disclosures.

In March 2016, the FASB issued ASU No. 2016-09 *"Compensation — Stock Compensation,"* which changes the accounting for stock-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. For public business entities, the amendments in this ASU are effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. Early adoption is permitted for all entities and any entity that elects early adoption must adopt all of the amendments in the same period. We are currently evaluating the impact of ASU 2016-09 on the consolidated financial statements and disclosures.

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" and under "Risk Factors" in Part II, Item 1A to our annual report on Form 10-K for the year ended December 31, 2015, which discussion is incorporated herein by reference. 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 is a worldwide producer of ion implantation 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 worldwide. Consolidation and partnering within the semiconductor manufacturing industry has resulted in a small number of customers representing a substantial portion of our business. Our net revenue from our ten largest customers accounted for 72.9% of total revenue for the six months ended June 30, 2016.

Our product development and manufacturing activities occur primarily in the United States. Axcelis' equipment and service products are highly technical and are sold primarily through a direct sales force in the United States, Europe and Asia.

Demand for semiconductor manufacturing equipment and services has historically been subject to cyclical industry conditions reflecting our customers' responses to changes in the nature and timing of technological advances in fabrication processes, supply and demand for chips, and global economic and market conditions. Separately from overall market demand, Axcelis' results are also impacted by our customers' decisions to purchase our products rather than our competitors' systems. Since 2014, our financial results reflect increasing sales of our innovative Purion ion implantation systems, and our continued investment in research and development programs related to our Purion ion implantation products. Semiconductor capital spending in 2016 is expected to be lower than 2015, resulting in first-half quarterly revenue below that of 2015. Over the longer term, we expect to continue to grow Purion system sales, gain market share and improve gross margins.

In light of these conditions, Axcelis' results can vary significantly year-over-year, as well as quarter-over-quarter.

Critical Accounting Estimates

Management's discussion and analysis of our financial condition and results of operations included herein and in our Annual Report on Form 10-K for the year ended December 31, 2015 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, revenue and expenses and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates and assumptions. 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.

Management has not identified any need to make any material change in, and has not changed, any of our critical accounting estimates and judgments as described in Management's Discussion and Analysis of Financial Conditions and Results of Operations included in our Annual Report on Form 10-K for the year ended December 31, 2015.

Results of Operations

The following table sets forth our results of operations as a percentage of total revenue:

	Three months ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Revenue:				
Product	91.3 %	92.7 %	91.7 %	92.5 %
Services	8.7	7.3	8.3	7.5
Total revenue	100.0	100.0	100.0	100.0
Cost of revenue:				
Product	53.7	59.4	56.8	60.5
Services	7.3	6.0	6.5	6.2
Total cost of revenue	61.0	65.4	63.3	66.7
Gross profit	39.0	34.6	36.7	33.3
Operating expenses:				
Research and development	13.2	10.1	13.0	10.6
Sales and marketing	9.0	7.5	8.9	7.6
General and administrative	9.7	7.9	9.3	8.1
Restructuring charges	0.0	0.0	0.2	0.0
Total operating expenses	31.9	25.5	31.4	26.3
Income from operations	7.1	9.1	5.3	7.0
Other (expense) income:				
Interest income	0.1	0.0	0.1	0.0
Interest expense	(2.1)	(1.7)	(1.8)	(1.6)
Other, net	(0.4)	0.1	(0.2)	(0.3)
Total other expense	(2.4)	(1.6)	(1.9)	(1.9)
Income before income taxes	4.7	7.5	3.4	5.1
Income tax provision (benefit)	0.3	0.1	(0.3)	0.1
Net income	4.4 %	7.4 %	3.7 %	5.0 %

Revenue

The following table sets forth our revenue:

	Three months ended June 30,		Period-to-Period Change		Six months ended June 30,		Period-to-Period Change	
	2016	2015	$	%	2016	2015	$	%
	(dollars in thousands)							
Revenue:								
Product	$ 58,859	$ 72,748	$ *(13,889)*	*(19.1)%*	$ 121,034	$ 140,278	$ *(19,244)*	*(13.7)%*
Percentage of revenue	*91.3 %*	*92.7 %*			*91.7 %*	*92.5 %*		
Services	5,592	5,689	*(97)*	*(1.7)%*	10,938	11,442	*(504)*	*(4.4)%*
Percentage of revenue	*8.7 %*	*7.3 %*			*8.3 %*	*7.5 %*		
Total revenue	$ 64,451	$ 78,437	$ (13,986)	*(17.8)%*	$ 131,972	$ 151,720	$ (19,748)	*(13.0)%*

Three Months Ended June 30, 2016 Compared with Three Months Ended June 30, 2015

Product

Product revenue, which includes system sales, sales of spare parts, product upgrades and used systems was $58.9 million, or 91.3%, of revenue during the three months ended June 30, 2016, compared with $72.7 million, or 92.7% of revenue for the three months ended June 30, 2015. The $13.9 million decrease in product revenue for the three month period ending June 30, 2016, in comparison to the same period in 2015, was primarily driven by a decrease in the number of Purion systems sold.

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, 2016 and December 31, 2015 was $14.4 million and $8.5 million, respectively. The increase in deferred revenue is primarily due the volume of shipments late in the quarter.

Services

Services revenue, which includes the labor component of maintenance and service contracts and fees for service hours provided by on-site service personnel, was $5.6 million, or 8.7% of revenue for the three months ended June 30, 2016, compared with $5.7 million, or 7.3% of revenue for the three months ended June 30, 2015. Although services revenue typically increases 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.

Six Months Ended June 30, 2016 Compared with Six Months Ended June 30, 2015

Product

Product revenue was $121.0 million, or 91.7% of revenue for the six months ended June 30, 2016, compared with $140.3 million, or 92.5% of revenue for the six months ended June 30, 2015. The $19.2 million decrease in product revenue was primarily driven by a decrease in the number of Purion systems sold.

Services

Services revenue was $10.9 million, or 8.3% of revenue for the six months ended June 30, 2016, compared with $11.4 million, or 7.5% of revenue for the six months ended June 30, 2015.

Revenue Categories used by Management

As an alternative to the line item revenue categories discussed above, management also uses revenue categorizations which look at revenue by systems and aftermarket, as described below.

Three Months Ended June 30, 2016 Compared with Three Months Ended June 30, 2015

Systems

Included in total revenue of $64.5 million during the three months ended June 30, 2016 is revenue from sales of new systems of $33.7 million, or 52.2% of total revenue, compared with $41.6 million, or 53.0%, of total revenue for the three months ended June 30, 2015. The decrease was due to lower sales of our Purion systems sold in the recent quarter.

Aftermarket

We refer to the business of selling spare parts, product upgrades and used systems, combined with the sale of maintenance labor and service contracts and service hours, as the "aftermarket" business. Included in total revenue of $64.5 million during the three months ended June 30, 2016 is revenue from our aftermarket business of $30.8 million, compared to $36.9 million for the three months ended June 30, 2015. Aftermarket revenue fluctuates from period to period based on capacity utilization at customers' manufacturing facilities which affects the sale of spare parts and demand for equipment service. Aftermarket revenue can also fluctuate from period to period based on the demand for system upgrades or used tools.

Six Months Ended June 30, 2016 Compared with Six Months Ended June 30, 2015

Systems

Included in total revenue of $132.0 million during the six months ended June 30, 2016 is revenue from sales of new systems of $70.7 million, or 53.6% of total revenue, compared with $84.1 million, or 55.4% of total revenue of $151.7 million for the six months ended June 30, 2015. The decrease was due to lower sales of our Purion systems in the recent period.

Aftermarket

Included in total revenue of $132.0 million during the six months ended June 30, 2016 is revenue from our aftermarket business of $61.3 million, or 46.4%, compared to $67.7 million, or 44.6% for the six months ended June 30, 2015.

Gross Profit / Gross Margin

The following table sets forth our gross profit / gross margin.

	Three months ended June 30,		Period-to-Period Change		Six months ended June 30,		Period-to-Period Change	
	2016	2015	$	%	2016	2015	$	%
	(dollars in thousands)							
Gross Profit:								
Product	$ 24,221	$ 26,188	$ (1,967)	*(7.5)%*	$ 46,132	$ 48,533	$ (2,401)	*(4.9)%*
Product gross margin	*41.2 %*	*36.0 %*			*38.1 %*	*34.6 %*		
Services	910	986	(76)	*(7.7)%*	2,415	$ 2,021	394	*19.5 %*
Services gross margin	*16.3 %*	*17.3 %*			*22.1 %*	*17.7 %*		
Total gross profit	$ 25,131	$ 27,174	$ (2,043)	*(7.5)%*	$ 48,547	$ 50,554	$ (2,007)	*(4.0)%*
Gross margin	*39.0 %*	*34.6 %*			*36.8 %*	*33.3 %*		

Three Months Ended June 30, 2016 Compared with Three Months Ended June 30, 2015

Product

Gross margin from product revenue was 41.2% for the three months ended June 30, 2016, compared to 36.0% for the three months ended June 30, 2015. The increase in gross margin of 5.2 percentage points resulted from improved margins on Purion systems combined with an increased mix of higher margin parts and upgrades.

Services

Gross margin from services revenue was 16.3% for the three months ended June 30, 2016, compared to 17.3% for the three months ended June 30, 2015. The decrease in gross margin in the recent period is attributable to a decreased share of higher margin service revenue compared with the prior period.

Six Months Ended June 30, 2016 Compared with Six Months Ended June 30, 2015

Product

Gross margin from product revenue was 38.1% for the six months ended June 30, 2016, compared to 34.6% for the six months ended June 30, 2015. The increase in gross margin of 3.5 percentage points resulted from improved margins on Purion systems, combined with an increased mix of higher margin parts and upgrades.

Services

Gross margin from services revenue was 22.1% for the six months ended June 30, 2016, compared to 17.7% for the six months ended June 30, 2015. The increase in gross margin of 4.4 percentage points in the recent period is attributable to an increased share of higher margin service revenue.

Operating Expenses

The following table sets forth our operating expenses:

	Three months ended June 30,		Period-to-Period Change		Six months ended June 30,		Period-to-Period Change	
	2016	2015	$	%	2016	2015	$	%
	(dollars in thousands)							
Research and development	$ 8,478	$ 7,899	$ 579	*7.3 %*	$ 17,114	$ 16,098	$ 1,016	*6.3 %*
Percentage of revenue	*13.2 %*	*10.1 %*			*13.0 %*	*10.6 %*		
Sales and marketing	5,790	5,858	(68)	*(1.2)%*	11,750	11,486	264	*2.3 %*
Percentage of revenue	*9.0 %*	*7.5 %*			*8.9 %*	*7.6 %*		
General and administrative	6,232	6,231	1	*0.0 %*	12,274	12,332	(58)	*(0.5)%*
Percentage of revenue	*9.7 %*	*7.9 %*			*9.3 %*	*8.1 %*		
Restructuring charges	—	8	(8)	*(100.0)%*	282	18	264	*1,466.7 %*
Percentage of revenue	*0.0 %*	*0.0 %*			*0.2 %*	*0.0 %*		
Total operating expenses	$ 20,500	$ 19,996	$ 504	*2.5 %*	$ 41,420	$ 39,934	$ 1,486	*3.7 %*
Percentage of revenue	*31.9 %*	*25.5 %*			*31.4 %*	*26.3 %*		

Our operating expenses consist primarily of personnel costs, including salaries, commissions, expected incentive plan payouts, stock-based compensation and related benefits and taxes; project material costs related to the design and development of new products and enhancement of existing products; and professional fees, travel and depreciation expenses.

Personnel costs are our largest expense, representing $11.3 million and $23.2 million, or 55.2% and 56.5%, of our total operating expenses for the three and six-month periods ended June 30, 2016, respectively. For the three and six month periods ended June 30, 2015, personnel costs were $11.5 million and $22.8 million, respectively, or 57.5% and 57.0%, respectively, of our total operating expenses. The lower personnel costs for the 3 months ended June 30, 2016 are primarily due to higher stock-based compensation expense in the same period last year resulting from accelerated vesting of equity awards as a result of stock price performance vesting terms. Personnel costs for the 6 months ended June 30, 2016 increased $0.4 million due to increased labor costs in research and development.

Research and Development

	Three months ended June 30,		Period-to-Period Change		Six months ended June 30,		Period-to-Period Change	
	2016	2015	$	%	2016	2015	$	%
	(dollars in thousands)							
Research and development	$ 8,478	$ 7,899	$ 579	*7.3 %*	$ 17,114	$ 16,098	1,016	*6.3 %*
Percentage of revenue	*13.2 %*	*10.1 %*			*13.0 %*	*10.6 %*		

Our ability to remain competitive depends largely on continuously developing innovative technology, with new and enhanced features and systems and introducing them at competitive prices on a timely basis. Accordingly, based on our strategic plan, we establish annual R&D budgets to fund programs that we expect will drive competitive advantages.

Three Months Ended June 30, 2016 Compared with Three Months Ended June 30, 2015

Research and development expense was $8.5 million during the three months ended June 30, 2016; an increase of $0.6 million, or 7.3%, compared with $7.9 million during the three months ended June 30, 2015. The increase in expense is primarily due to increased labor and material costs incurred in the current year compared to the same period last year.

Six Months Ended June 30, 2016 Compared with Six Months Ended June 30, 2015

Research and development expense was $17.1 million during the six months ended June 30, 2016; an increase of $1.0 million, or 6.3%, compared with $16.1 million during the six months ended June 30, 2015. The increase was primarily due to increased labor and material costs incurred in the current year compared to the same period last year.

Sales and Marketing

	Three months ended June 30,		Period-to-Period Change		Six months ended June 30,		Period-to-Period Change	
	2016	2015	$	%	2016	2015	$	%
	(dollars in thousands)							
Sales and marketing	$ 5,790	$ 5,858	$ (68)	*(1.2)*%	$ 11,750	$ 11,486	$ 264	*2.3* %
Percentage of revenue	*9.0* %	*7.5* %			*8.9* %	*7.6* %		

Our sales and marketing expenses result primarily from the sale of our equipment and services through our direct sales force.

Three Months Ended June 30, 2016 Compared with Three Months Ended June 30, 2015

Sales and marketing expense was $5.8 million during the three months ended June 30, 2016; a decrease of $0.1 million, or 1.2%, relatively flat compared with $5.9 million during the three months ended June 30, 2015.

Six Months Ended June 30, 2016 Compared with Six Months Ended June 30, 2015

Sales and marketing expense was $11.8 million during the six months ended June 30, 2016; an increase of $0.3 million, or 2.3%, compared with $11.5 million during the six months ended June 30, 2015. The increase is primarily due to labor costs.

General and Administrative

	Three months ended June 30,		Period-to-Period Change		Six months ended June 30,		Period-to-Period Change	
	2016	2015	$	%	2016	2015	$	%
	(dollars in thousands)							
General and administrative	$ 6,232	$ 6,231	$ 1	*0.0* %	$ 12,274	$ 12,332	(58)	*(0.5)*%
Percentage of revenue	*9.7* %	*7.9* %			*9.3* %	*8.1* %		

Our general and administrative expenses result primarily from the costs associated with our executive, finance, information technology, legal and human resource functions.

Three Months Ended June 30, 2016 Compared with Three Months Ended June 30, 2015

General and administrative expense was $6.2 million during the three months ended June 30, 2016 and 2015.

Six Months Ended June 30, 2016 Compared with Six Months Ended June 30, 2015

General and administrative expense was $12.3 million during the six months ended June 30, 2016 and 2015.

Restructuring Charges

	Three months ended June 30, 2016	Three months ended June 30, 2015	Period-to-period change $	Period-to-period change %	Six months ended June 30, 2016	Six months ended June 30, 2015	Period-to-period change $	Period-to-period change %
	(dollars in thousands)							
Restructuring charges	$ —	$ 8	$ (8)	*(100.0)%*	$ 282	$ 18	$ 264	*1,466.7 %*
Percentage of revenue	*0.0 %*	*0.0 %*			*0.2 %*	0.0 %		

In the first quarter of 2016, due to changes in customer service contracts resulting from a consolidation in our customer base, we had severance and other costs related to a reduction in force.

Other (Expense) Income

	Three months ended June 30, 2016	Three months ended June 30, 2015	Period-to-period change $	Period-to-period change %	Six months ended June 30, 2016	Six months ended June 30, 2015	Period-to-period change $	Period-to-period change %
	(dollars in thousands)				(dollars in thousands)			
Other (expense) income	$ (1,522)	$ (1,255)	$ (267)	*21.3 %*	$ (2,574)	$ (2,728)	$ 154	*(5.6)%*
Percentage of revenue	*(2.4)%*	*(1.6)%*			*(1.9)%*	*(1.9)%*		

Other (expense) income consists primarily of foreign exchange gains and losses attributable to fluctuations against local currencies of the countries in which we operate, interest earned on our invested cash balances, bank fees associated with our financing arrangements and interest expense related to financing arrangements. Other expense was $1.5 million for the three months ended June 30, 2016, compared with $1.3 million for the three months ended June 30, 2015. The increase in other expense was primarily driven by fluctuations in currency exchange. During the three months ended June 30, 2016 and 2015, respectively, the Company recorded $1.3 million in deemed interest expense associated with the lease of our headquarters in Beverly, which is being accounted for as a financing obligation.

The $0.2 million decrease in other expense for the six month period ended June 30, 2016 compared with the six month period ended June 30, 2015, was primarily due to fluctuations in currency exchange.

During the three and six-month periods ended June 30, 2016 and 2015, with the exception of operating lease agreements entered into by the Company, we had no significant off-balance-sheet risk such as exchange contracts, option contracts or other foreign hedging arrangements.

Income Tax Provision (Benefit)

	Three months ended June 30, 2016	Three months ended June 30, 2015	Period-to-period change $	Period-to-period change %	Six months ended June 30, 2016	Six months ended June 30, 2015	Period-to-period change $	Period-to-period change %
	(dollars in thousands)				(dollars in thousands)			
Income tax	$ 172	$ 40	$ 132	*330.0 %*	$ (332)	$ 141	$ (473)	*(335.5)%*
Percentage of revenue	*0.3 %*	*0.1 %*			*(0.3)%*	*0.1 %*		

We incur income tax expense relating principally to operating results of foreign entities in Europe and Asia, where we earn taxable income. We have significant net operating loss carryforwards in the United States and certain European tax jurisdictions and, as a result, we do not currently pay significant income taxes in those jurisdictions. Additionally, we do not recognize the tax benefit for such losses in the United States and certain European taxing jurisdictions, and will not do so until we have sufficient income such that these tax benefits can be utilized. The

Company will continue to maintain a full valuation allowance for these tax assets until accounting principles require the release of the allowance based on expectations of continuing profitability.

During the first quarter of 2016, the statute of limitations associated with a tax position previously taken by the Company expired. The related tax reserve of $0.6 million and accrued interest of $0.3 million that had been recorded were reversed during the six months ended June 30, 2016.

Liquidity and Capital Resources

The Company had $61.0 million in cash and cash equivalents at June 30, 2016. Management believes that maintaining a strong cash balance is necessary to provide funding for potential ramps in our business, which can require significant cash investment to meet sudden demand.

Our liquidity is affected by many factors. Some of these relate specifically to the operations of our business, for example, the rate of sale of our products, and others relate to the uncertainties of global economies, including the availability of credit and the condition of the overall semiconductor equipment industry. Our established cost structure, other than cost of goods sold, does not vary significantly with changes in volume. We experience fluctuations in operating results and cash flows depending on these factors.

During the six months ended June 30, 2016, the Company used $16.7 million of cash in operating activities. This was predominately driven by increases in accounts receivable related to late quarter system sales and increases in other assets and liabilities. In comparison, during the six months ended June 30, 2015, the Company generated $11.8 million of cash from operating activities.

Investing activities for the six months ended June 30, 2016 and 2015 included $1.9 million and $0.7 million, respectively, used for capital expenditures.

Financing activities for the six months ended June 30, 2016 provided net cash of $0.5 million, primarily relating to the proceeds from the exercise of stock options. In comparison, financing activities for the six months ended June 30, 2015 provided net cash of $35.8 million, primarily due to a net cash inflow of $48.5 million from the sale and leaseback of our corporate headquarters building in Beverly, Massachusetts. This cash inflow from the sale and leaseback was reduced by $0.8 million of related financing costs and the $14.5 million discharge of a term loan secured by a mortgage on the property. Cash provided by financing activities in the first half of 2015 included $1.9 million received relating to the proceeds from the exercise of stock options purchases and through the Employee Stock Purchase Plan as well as a $0.8 million decrease in our restricted cash balance.

We believe that based on our current market, revenue, expense and cash flow forecasts, our existing cash and cash equivalents will be sufficient to satisfy our anticipated cash requirements for the short and long-term. We currently have no credit facility but management believes we would be able to borrow on reasonable terms if needed.

Commitments and Contingencies

Significant commitments and contingencies at June 30, 2016 are consistent with those discussed in Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and Note 17 to the consolidated financial statements in our Annual Report on Form 10-K for the fiscal year ended December 31, 2015.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

As of June 30, 2016, 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, 2015.

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 three months ended June 30, 2016 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

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

Item 1A. Risk Factors.

As of June 30, 2016, 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, 2015.

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

None.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not Applicable.

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 adopted May 6, 2009. 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	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Axcelis Technologies, Inc., effective June 30, 2016, as filed with the Secretary of State of the State of Delaware. Incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed with the Commission on July 5, 2016.
3.3	Bylaws of the Company, as amended as of May 13, 2014. Incorporated by reference to Exhibit 3.2 of the Company's Form 8-K filed with the Commission on May 19, 2014.
10.1	Axcelis Technologies, Inc. 2012 Equity Incentive Plan, as amended through May 4, 2016, as adjusted for the reverse stock split effective June 30, 2016. Filed herewith.
31.1	Certification of the Principal Executive Officer under Exchange Act Rule 13a-14(a)/15d-14(a) (Section 302 of the Sarbanes-Oxley Act), dated August 8, 2016. Filed herewith.
31.2	Certification of the Principal Financial Officer under Exchange Act Rule 13a-14(a)/15d-14(a) (Section 302 of the Sarbanes-Oxley Act), dated August 8, 2016. Filed herewith.
32.1	Certification of the Principal Executive Officer pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code (Section 906 of the Sarbanes-Oxley Act), dated August 8, 2016. Filed herewith.
32.2	Certification of the Principal Financial Officer pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code (Section 906 of the Sarbanes-Oxley Act), dated August 8, 2016. Filed herewith.
101	The following materials from the Company's Form 10-Q for the quarter ended June 30, 2016, formatted in eXtensible Business Reporting Language (XBRL): (i) Consolidated Statements of Operations, (ii) Consolidated Statements of Comprehensive Income (Loss), (iii) Consolidated Balance Sheets, (iv) Consolidated Statements of Cash Flows and (v) Notes to Consolidated Financial Statements (Unaudited). 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 8, 2016	By: /s/ KEVIN J. BREWER
	Kevin J. Brewer *Executive Vice President and Chief Financial Officer* *Duly Authorized Officer and Principal Financial Officer*

Exhibit 10.1

AXCELIS TECHNOLOGIES, INC.

2012 EQUITY INCENTIVE PLAN

As approved by the Shareholders on May 2, 2012, May 14, 2013, May 13, 2014,

May 13, 2015, and May 4, 2016

1. *Purpose*.

The purpose of the Axcelis Technologies, Inc. 2012 Equity Incentive Plan (the "Plan") is to attract and retain persons who are expected to make important contributions to the Company and its Affiliates, to provide an incentive for them to achieve the Company's goals, and to enable them to participate in the growth of the Company by granting Awards with respect to the Company's Common Stock. Certain capitalized terms used herein are defined in Section 7 below.

2. *Administration*.

The Plan shall be administered by the Committee; provided, that the Board may in any instance perform any of the functions of the Committee hereunder. The Committee shall have authority to adopt, alter and repeal such administrative rules, guidelines and practices governing the operation of the Plan as it shall from time to time consider advisable, and to interpret the provisions hereof in its discretion. The Committee's determinations hereunder shall be final and binding. The Committee may, subject to applicable law, delegate to one or more Executive Officers of the Company the power to make Awards to Participants who are not Reporting Persons or Covered Employees and all determinations hereunder with respect thereto, provided that the Committee shall fix the maximum number of shares that may be subject to such Awards.

3. *Eligibility*.

All directors and all employees and consultants of the Company or any Affiliate capable of contributing to the successful performance of the Company, other than any person who has irrevocably elected not to be eligible, are eligible to be Participants in the Plan.

4. *Stock Available for Awards*.

(a) *Amount*. Subject to adjustment under subsection 4(b), up to an aggregate of 3,762,500 shares of Common Stock may be issued pursuant to Awards, including Incentive Stock Options, under the Plan. For the purposes of counting shares hereunder:

i. The number of shares issued as, or upon settlement of, any Award other than an Option or Stock Appreciation Right shall be multiplied by 1.5;

ii. Outstanding shares tendered by the Participant to pay for the exercise of an Option or Stock Appreciation Right, shares repurchased in the open market by the Company, and shares that are withheld by the Company to satisfy the exercise or tax withholding obligation upon exercise or vesting of an Award may not be netted out against shares of Common Stock issued pursuant to Awards hereunder;

iii. Shares subject to any Award granted under this Plan that are not issued because the Award expires, is terminated unexercised or is forfeited, in whole or in part, may be subject to new Awards without being deemed to exceed such maximum amount;

iv. Shares that are not issued under an award that is outstanding under the 2000 Stock Plan as of May 2, 2012 because such award expires, is terminated unexercised or is forfeited may be subject to new Awards under this Plan (other than Incentive Stock Options), without being deemed to exceed such maximum amount; and

v. Shares issued under this Plan as a result of the assumption or substitution of outstanding grants from an acquired company shall not be deemed to exceed such maximum amount.

Shares issued under the Plan may consist of authorized but unissued shares or treasury shares

(b) *Adjustments*. Upon any equity restructuring, whether a stock dividend, recapitalization, split up or combination of shares, or otherwise, the number of shares in respect of which Awards may be made under the Plan, the number of shares subject to outstanding Awards, the exercise, purchase or conversion price with respect to any Award, and the limit on individual grants in subsection 5(c) shall be proportionately adjusted, provided that the number of shares subject to any Award shall always be a whole number. In the event the Committee determines that any other reorganization, recapitalization, merger, spin off or other corporate transaction affects the Common Stock such that an adjustment is required in order to preserve the benefits intended to be provided by the Plan, the Committee shall equitably adjust any or all of the number and kind of shares in respect of which Awards may be made under the Plan, the number and kind of shares subject to outstanding Awards, the exercise, purchase or conversion price with respect to any Award, and the limit on individual grants in subsection 5(c), provided that the number of shares subject to any Award shall always be a whole number. If considered appropriate, the Committee may make provision for a cash payment with respect to all or part of an outstanding Award instead of or in addition to any such adjustment. Any adjustment made pursuant to this subsection shall be subject, in the case of Incentive Stock Options, to any limitation required under the Code.

5. *Awards under the Plan*.

(a) *Types of Awards*. The Committee may grant Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Stock Equivalents, and Awards of shares of Common Stock that are not subject to restrictions or forfeiture. The effectiveness of any such grant may be conditioned on the passage of time, the achievement of any Performance Goals, or the happening of any other event.

(b) *Terms and Conditions of Awards*.

(i) *Participants; Terms*. The Committee shall select the Participants to receive Awards and determine the terms and conditions of each Award. Without limiting the foregoing but subject to the other provisions of the Plan and applicable law, the Committee shall determine (A) the number of shares of Common Stock subject to each Award or the manner in which such number shall be determined, (B) the price, if any, a Participant shall pay to receive or exercise an Award or the manner in which such price shall be determined, (C) the time or times when an Award may vest or be exercised, settled, or transferred, (D) any Performance Goals, restrictions or other conditions to vesting, exercise, settlement, or transferability of an Award, (E) whether an Award may be settled in the form of cash, Common Stock or other securities of the Company, Awards or other property, and the manner of calculating the amount or value thereof, (F) the duration of any Restricted Period or any other circumstances in which an Award may be forfeited to the Company, (G) the effect on an Award of the disability, death, retirement or other termination of employment or other service of a Participant, and (H) the extent to which, and the period during which, the Participant or the Participant’s legal representative, guardian or Designated Beneficiary may receive payment of an Award or exercise rights thereunder. Except as otherwise provided hereby or in a particular Award, any determination or action with respect to an Award may be made or taken by the Committee at the time of grant or at any time thereafter.

(ii) *Options and Stock Appreciation Rights*. Incentive Stock Options may only be granted to persons eligible to receive such Options under the Code. The exercise price for any Option or Stock Appreciation Right shall not be less than 100% of the Fair Market Value of the Common Stock on the Date of Grant; provided that Options granted in substitution for options granted by a former employer to persons who become eligible to receive Awards hereunder as a result of a transaction described in Section 424(a) of the Code may, consistent with such Section, have a lower exercise price. No Option or Stock Appreciation Right shall have a term longer than seven (7) years. No Incentive Stock Option may be granted more than ten years after the Effective Date. The Committee shall determine the manner of calculating the excess in value of the shares of Common Stock over the exercise price of a Stock Appreciation Right.

(iii) *Restricted Stock and Restricted Stock Units*. Shares of Restricted Stock and shares subject to Restricted Stock Units may not be sold, assigned, transferred, pledged or otherwise encumbered, except as permitted by the Committee, during the applicable Restricted Period. Restricted Stock Units may be settled in shares of Common Stock or cash as determined by the Committee.

(iv) *Minimum Vesting Requirements*. Notwithstanding Sections 5(b)(i) or Section 6(e), with respect to Awards to Executive Officers:

(A) vesting, settlement, or lapse of forfeiture restrictions that is solely based on continued employment, service or the passage of time shall occur (A) with respect to no more than one third of the shares subject to such Award per year and (B) over not less than four years from the date of grant with respect to the full number of shares subject to such Award; and

(B) vesting, settlement, or lapse of forfeiture restrictions that is based on the achievement of Performance Goals shall occur based on a Performance Period of at least one year;

provided that the foregoing limitations shall not (1) apply to vesting, settlement, or lapse of forfeiture restrictions in connection with the termination of employment or other service of a Participant by the Company or due to the Participant's disability, death or retirement nor (2) preclude the Committee from (x) exercising its discretion to accelerate the vesting of any Award upon a Transaction as contemplated by Section 5(b)(viii), (y) establishing a shorter vesting schedule for consultants or newly hired employees, or (z) establishing a shorter schedule for vesting, settlement, or lapse of forfeiture restrictions on Awards that are granted in exchange for or in lieu of the right to receive the payment of an equivalent amount of salary, bonus or other compensation.

(v) *Payment of Exercise Price*. The Committee shall determine the form of consideration and manner of payment of the exercise price, if any, of any Award. Without limiting the foregoing, the Committee may, subject to applicable law, permit such payment to be made in whole or in part in cash or by surrender of shares of Common Stock (which may be shares retained from the respective Award or any other Award) valued at their Fair Market Value on the date of surrender, or such other lawful consideration, including a payment commitment of a financial or brokerage institution, as the Committee may determine. The Company may accept, in lieu of actual delivery of stock certificates, an attestation by the Participant in form acceptable to the Committee that he or she owns of record the shares to be tendered free and clear of claims and other encumbrances.

(vi) *Dividends*. In the discretion of the Committee, any Award may provide the Participant with dividends or dividend equivalents payable (in cash, in shares of Common Stock, or in the form of Awards under the Plan) currently or deferred and with or without interest ; provided that any dividend paid or issued with respect to any portion of an Award of Restricted Stock and any dividend equivalent paid or issued with respect to any portion of any other Award shall be subject to the same restrictions (including risk of forfeiture) as such Restricted Stock or other Award, respectively, until the end of the respective Restricted Period or such portion has otherwise vested.

(vii) *Termination and Forfeiture*. The terms of any Award may include such continuing provisions for termination of the Award and/or forfeiture or recapture of any shares, cash or other property previously issued pursuant thereto relating to competition or other activity or circumstances detrimental to the Company as the Committee may determine to be in the Company's best interests. Without limiting the foregoing, the terms of any Award shall be subject to, and shall be deemed automatically amended to incorporate, any "clawback," "recapture," or similar policy adopted by the Company and in effect before or after the grant of such Award.

(viii) *Certain Extraordinary Transactions*. The Committee may in its discretion provide, at the time of grant or at any time thereafter, that in the case of any recapitalization, stock acquisition, merger, consolidation or other form of corporate transaction in which a company other than the Company is the surviving, continuing, successor or purchasing entity (a "Transaction"), the surviving, continuing, successor or purchasing entity or a parent or subsidiary of such entity may, without the consent of the Participant, assume the Company's rights and obligations under any Award or portion thereof outstanding immediately before the Transaction or substitute for any such outstanding Award or portion thereof a substantially equivalent award with respect to such entity's own stock or other property or cash, in either case with equitable adjustments in the number and type of shares or other assets subject to the Awards and the exercise, purchase or conversion price with respect to any Award, in light of the consideration received by the Company's stockholders in the Transaction. Any such Award that is not so assumed or substituted for shall terminate upon the consummation of such Transaction on such terms, if any, as the Committee shall provide. Notwithstanding the foregoing, if the stockholders of the Company receive consideration that is all or predominantly cash in exchange for their shares of common Stock in a Transaction, then, in order to preserve the Participants' rights under outstanding Awards, the Committee shall, without the need for consent of any Participant, either (A) cause any unexercisable or unvested portion of an Award outstanding immediately before the Transaction to become fully exercisable and vested prior to such Transaction (but effective only on consummation of the Transaction), and any Options and Stock Appreciation Rights that have not been exercised as of the consummation of the Transaction shall thereupon terminate or (B) provide for payment to the Participant of cash, stock of another entity party to the Transaction, or other property with a Fair Market Value equal to the amount, if any, that would have been received upon the vesting, exercise, settlement, or transferability of the Award had any unexercisable or unvested portion of the Award become fully exercisable and vested and the

Award been exercised or paid in connection with the Transaction, reduced (but not below zero) by the exercise or purchase price per share, if any, under such Award, whereupon the Award shall terminate. If any portion of such consideration may be received by Company's stockholders in the Transaction on a contingent or delayed basis, the Committee may, in its sole discretion, determine such Fair Market Value per share as of the time of the Transaction on the basis of the Committee's good faith estimate of the present value of the probable amount of future payment of such consideration.

In the event of a recapitalization, stock acquisition, merger, consolidation or other form of corporate transaction in which the Company is the surviving, continuing, successor or purchasing entity, the Committee may make equitable adjustments to outstanding Awards pursuant to Section 4(b).

(ix) *Documentation*. Each Award under the Plan shall be evidenced by documentation in the form prescribed from time to time by the Committee and delivered to or executed and delivered by the Participant specifying the terms and conditions of the Award and containing such other terms and conditions not inconsistent with the provisions hereof as the Committee considers necessary or advisable to achieve the purposes of the Plan or to comply with applicable law and accounting principles. Any such documentation may be maintained solely in electronic format.

(x) *In General*. Any Award may be made alone, in addition to, or in relation to any other Award. The terms of Awards of each type need not be identical, and the Committee need not treat Participants uniformly. No Award shall be transferable except upon such terms and conditions and to such extent as the Committee determines, provided that no Award shall be transferable for value and Incentive Stock Options may be transferable only to the extent permitted by the Code. No Award to any Participant subject to United States income taxation shall provide for the deferral of compensation that does not comply with Section 409A of the Code. The achievement or satisfaction of any Performance Goals, restrictions or other conditions to vesting, exercise, settlement, or transferability of an Award shall be determined by the Committee.

(c) *Limit on Individual Grants*. The maximum number of shares of Common Stock subject to Options, Stock Appreciation Rights and other Awards intended to satisfy the requirements for "performance based compensation" within the meaning of Section 162(m) of the Code that may be granted to a Participant in any fiscal year may not exceed 312,500 shares, subject to adjustment under subsection 4(b). In the case of any performance based Awards settled in cash, no more than $1,000,000 may be paid to any Participant with respect to any one year of a Performance Period.

6. *General Provisions*.

(a) *Tax Withholding*. A Participant shall pay to the Company, or make provision satisfactory to the Committee for payment of, any taxes required by law to be withheld in respect of Awards under the Plan no later than the date of the event creating the tax liability. The Company and its Affiliates may, to the extent permitted by law, deduct any such tax obligations from any payment of any kind due to the Participant under the Plan or otherwise. In the Committee's discretion, the minimum tax obligations required by law to be withheld in respect of Awards may be paid in whole or in part in shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value on the date of retention or delivery.

(b) *Legal Compliance*. The Company shall not be required to issue any shares of Common Stock or take any other action pursuant to the Plan unless the Company is satisfied that all requirements of law, or of any stock exchange on which the Common Stock is then listed, in connection therewith have been or will be complied with, and the Committee may impose any restrictions on the rights of Participants hereunder as it shall deem necessary or advisable to comply with any such requirements.

(c) *Foreign Nationals*. Awards may be made to Participants who are foreign nationals or employed outside the United States on such terms and conditions different from those specified herein as the Committee considers necessary or advisable to achieve the purposes of the Plan or to comply with applicable laws.

(d) *Awards Not Includable for Benefit Purposes*. Awards and other payments received by a Participant pursuant to the provisions of the Plan shall not be included in the determination of benefits under any pension, group insurance or other benefit plan applicable to the Participant which is maintained by the Company or any of its Affiliates, except as may be provided under the terms of such plans or determined by the Board.

(e) *Amendment, Exchange and Repurchase of Awards*.

(i) Subject to clauses (ii) and (iii) below, the Committee may amend, modify or terminate any outstanding Award, including without limitation changing the dates of vesting, exercise or settlement, causing the Award to be assumed by another entity, and substituting therefor another Award of the same or a different type, provided that the Participant's consent to such action shall be required unless the terms of this Plan or the Award permit such action, the Committee determines that such action is required by law or stock exchange rule, or the Committee determines that the action, taking into account any related action, would not materially and adversely affect the Participant.

(ii) Notwithstanding the attainment of Performance Goals in the case of any Award intended to satisfy the requirements for "performance based compensation" within the meaning of Section 162(m) of the Code, the Committee may reduce (but not increase) the amount payable at a given level of performance to take into account additional factors that the Committee may deem relevant.

(iii) The foregoing notwithstanding, without further approval of the stockholders of the Company, (A) the Committee shall not authorize the amendment of any outstanding Option or Stock Appreciation Right to reduce the exercise price, (B) no Option or Stock Appreciation Right shall be canceled and replaced with an Award exercisable for Common Stock at a lower exercise price and (C) no Award shall be canceled in exchange for a cash payment from the Company to the Award owner, except under the limited circumstances described above in Section 5(b)(viii) relating to Transactions.

7. *Certain Definitions*. As used in this Plan:

"Affiliate" means any business entity in which the Company owns directly or indirectly 50% or more of the total voting power or has a significant financial interest as determined by the Committee.

"Award" means any award of shares of Common Stock or right with respect to shares described in Section 5(a).

"Board" means the Board of Directors of the Company.

"Code" means the Internal Revenue Code of 1986, as amended from time to time, or any successor law.

"Committee" means one or more committees appointed by the Board to administer the Plan or a specified portion thereof. Each such committee shall be comprised of not less than two members of the Board who shall meet such criteria as the Board may specify from time to time.

"Common Stock" means the Common Stock, $0.001 par value, of the Company.

"Company" means Axcelis Technologies, Inc., a Delaware corporation.

"Covered Employee" means a "covered employee" within the meaning of Section 162(m) of the Code.

"Date of Grant" means the date on which all requirements under applicable law and the Company's certificate of incorporation and bylaws for the effective grant of an Award have been satisfied.

"Designated Beneficiary" means the beneficiary designated by a Participant, in a manner determined by the Committee, to receive amounts due or exercise rights of the Participant in the event of the Participant's death. In the absence of an effective designation by a Participant, "Designated Beneficiary" means the Participant's legal representative.

"Effective Date," from time to time, means the most recent date that the Plan was adopted or, if earlier, that it was approved by the stockholders (including approval of the Plan as amended), as such terms are used in the regulations under Section 422 of the Code.

"Exchange Act" means the Securities Exchange Act of 1934, as amended from time to time, or any successor law.

"Executive Officer" has the meaning given in Rule 3b 7 under the Exchange Act, or any successor provision.

“Fair Market Value” with respect to the Common Stock or other property means the fair market value thereof determined by such methods as shall be established by the Committee from time to time. Unless otherwise determined by the Committee in good faith, the per share Fair Market Value of the Common Stock as of any date shall mean (a) if the Common Stock is then listed or admitted to trading on a national securities exchange, (i) the last reported sale price on such date on the principal national securities exchange on which the Common Stock is then listed or admitted to trading, (ii) if no such reported sale took place on such date, the average of the closing bid and asked prices on such exchange on such date, or (iii) if neither (i) nor (ii) applies, the last reported sale price on the next preceding date on which trading took place, or (b) if the Common Stock is then traded in the over the counter market, the average of the closing bid and asked prices on such date, as reported by The Wall Street Journal or other appropriate publication selected by the Committee, for the over the counter market.

“Incentive Stock Option” means an Option complying with the requirements of Section 422 of the Code or any successor provision and any regulations thereunder.

“Option” means a right to purchase shares of Common Stock and may be an Incentive Stock Option if specified by the Committee.

“Participant” means a person selected by the Committee to receive an Award under the Plan.

“Performance Goals” means, in the case of Awards intended to satisfy the requirements for “performance based compensation” within the meaning of Section 162(m) of the Code, one or more objective performance goals established by the Committee, based on one or more of the following criteria: revenue; revenue growth; sales; expenses; margins; net income; earnings or earnings per share; cash flow; stock price; shareholder return; return on investment; return on invested capital, assets, or equity; profit before or after tax; operating profit; operating margin; return on research and development investment; market capitalization; quality improvements; market share; cycle time reductions; customer satisfaction measures; strategic positioning or marketing programs; market penetration or expansion; business / information systems improvements; expense management; infrastructure support programs; human resource programs; customer programs; technology development programs; goals relating to acquisitions or divestitures, or any combination of the foregoing, including without limitation goals based on any of such measures relative to peer groups or market indices, and may be particular to a Participant or may be based, in whole or in part, on the performance of the division, department, line of business, subsidiary, or other business unit, whether or not legally constituted, in which the Participant works or on the performance of the Company generally.

“Performance Period” means any period of service of at least one year designated by the Committee as applicable to an Award intended to satisfy the requirements for “performance based compensation.”

“Reporting Person” means a person subject to Section 16 of the Exchange Act.

“Restricted Period” means any period during which an Award or any part thereof may be forfeited to the Company.

“Restricted Stock” means shares of Common Stock that are subject to forfeiture to the Company.

“Restricted Stock Unit” means the right, subject to forfeiture, to receive the value of a share of Common Stock in the future, payable in the form of cash, Common Stock or other securities of the Company, Awards or other property, and is an unfunded and unsecured obligation of the Company.

“Stock Appreciation Right” means the right to receive any excess in value of shares of Common Stock over the exercise price of such right.

“Stock Equivalent” means the right to receive payment from the Company based in whole or in part on the value of the Common Stock, payable in the form of cash, Common Stock or other securities of the Company, Awards or other property, and may include without limitation phantom stock, performance units, and Stock Appreciation Rights.

“Termination of employment or other service of a Participant” means the voluntary or involuntary termination of a Participant’s employment with the Company or an Affiliate for any reason, including death, disability, retirement or as the result of the divestiture of the Participant’s employer or any similar transaction in which the Participant’s employer ceases to be the Company or one of its Affiliates. Whether entering military or other government service shall constitute “termination of employment or other service,” or whether a “termination of employment or other service” shall occur as a result of disability, shall be determined in each case by the Committee in its sole discretion before or after the grant of the respective Award. In the case of a member of the Board or consultant who is not an employee of the Company or an Affiliate, “termination of employment or other service” shall mean the voluntary or involuntary termination of Board service or the consulting relationship, as the case may be, for any reason.

“Transferable for value” means a transfer on terms that would prevent the Company from relying on Securities and Exchange Commission Form S 8 (or any successor form) with respect to the issuance of the Common Stock underlying the respective Award.

8. *Miscellaneous*.

(a) *No Rights with Respect to Service*. No person shall have any claim or right hereunder to be granted an Award. Neither the adoption, maintenance, or operation of the Plan nor any Award hereunder shall confer upon any person any right with respect to the continuance of his or her employment by or other service with the Company or any Affiliate nor shall they interfere with the rights of the Company or any Affiliate to terminate or otherwise change the terms of such service at any time, including, without limitation, the right to promote, demote or otherwise re assign any person from one position to another within the Company or any Affiliate. Unless the Committee otherwise provides in any case, the service of a Participant with an Affiliate shall be deemed to terminate for purposes of the Plan when such Affiliate ceases to be an Affiliate of the Company.

(b) *No Rights as Stockholder*. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be issued under the Plan until he or she becomes the holder thereof. A Participant to whom Common Stock is awarded will be considered the holder of such Common Stock at the time of the Award, except as otherwise provided in the applicable Award.

(c) *Amendment of Plan*. The Board may amend, suspend or terminate the Plan or any portion thereof at any time, subject to such stockholder approval as the Board determines to be necessary or advisable to comply with any tax or regulatory requirement.

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 8, 2016

/s/ MARY G. PUMA

Mary G. Puma,
President and Chief Executive Officer

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, Kevin J. Brewer, 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 8, 2016

/s/ KEVIN J. BREWER

Kevin J. Brewer,
Executive Vice President and Chief Financial Officer

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 8, 2016.

/s/ MARY G. PUMA

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

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 8, 2016.

/s/ KEVIN J. BREWER

Kevin J. Brewer
Executive Vice President and Chief Financial Officer of Axcelis Technologies, Inc.