
**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 March 31, 2017

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, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth 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

Emerging growth company

If an emerging growth company, indicate by check mark if registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

As of May 1, 2017 there were 30,095,828 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 March 31,	
	2017	2016
Revenue:		
Product	\$ 81,978	\$ 62,175
Services	4,915	5,346
Total revenue	<u>86,893</u>	<u>67,521</u>
Cost of revenue:		
Product	46,797	40,263
Services	5,382	3,842
Total cost of revenue	<u>52,179</u>	<u>44,105</u>
Gross profit	34,714	23,416
Operating expenses:		
Research and development	9,895	8,636
Sales and marketing	7,049	5,960
General and administrative	7,057	6,042
Restructuring charges	—	282
Total operating expenses	<u>24,001</u>	<u>20,920</u>
Income from operations	10,713	2,496
Other (expense) income:		
Interest income	69	54
Interest expense	(1,111)	(1,047)
Other, net	(154)	(59)
Total other expense	<u>(1,196)</u>	<u>(1,052)</u>
Income before income taxes	9,517	1,444
Income tax provision (benefit)	11	(504)
Net income	<u>\$ 9,506</u>	<u>\$ 1,948</u>
Net income per share:		
Basic	<u>\$ 0.32</u>	<u>\$ 0.07</u>
Diluted	<u>\$ 0.29</u>	<u>\$ 0.06</u>
Shares used in computing net income per share:		
Basic weighted average common shares	<u>29,772</u>	<u>29,038</u>
Diluted weighted average common shares	<u>32,255</u>	<u>30,520</u>

See accompanying Notes to these Consolidated Financial Statements

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

	Three months ended	
	March 31,	
	2017	2016
Net income	\$ 9,506	\$ 1,948
Other comprehensive income:		
Foreign currency translation adjustments	1,915	1,049
Amortization of actuarial gains/losses and other adjustments from pension plan	28	26
Total other comprehensive income	1,943	1,075
Comprehensive income	<u>\$ 11,449</u>	<u>\$ 3,023</u>

See accompanying Notes to these Consolidated Financial Statements

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

	March 31, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 69,429	\$ 70,791
Accounts receivable, net	67,083	50,573
Inventories, net	115,635	113,853
Prepaid expenses and other current assets	7,937	5,512
Total current assets	260,084	240,729
Property, plant and equipment, net	31,486	30,840
Long-term restricted cash	6,792	6,864
Other assets	24,245	23,798
Total assets	<u>\$ 322,607</u>	<u>\$ 302,231</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 26,426	\$ 24,996
Accrued compensation	5,920	5,142
Warranty	2,748	2,426
Income taxes	252	240
Deferred revenue	12,179	10,335
Other current liabilities	5,310	4,592
Total current liabilities	52,835	47,731
Sale leaseback obligation	47,681	47,586
Long-term deferred revenue	942	674
Other long-term liabilities	4,906	4,785
Total liabilities	106,364	100,776
Commitments and contingencies (Note 12)		
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; 29,995 shares issued and outstanding at March 31, 2017; 29,518 shares issued and outstanding at December 31, 2016	30	30
Additional paid-in capital	538,747	535,408
Accumulated deficit	(322,198)	(331,704)
Accumulated other comprehensive loss	(336)	(2,279)
Total stockholders' equity	216,243	201,455
Total liabilities and stockholders' equity	<u>\$ 322,607</u>	<u>\$ 302,231</u>

See accompanying Notes to these Consolidated Financial Statements

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

	Three months ended	
	March 31,	
	2017	2016
Cash flows from operating activities		
Net income	\$ 9,506	\$ 1,948
Adjustments to reconcile net income to net cash used in operating activities:		
Depreciation and amortization	1,177	918
Deferred taxes	(22)	(50)
Stock-based compensation expense	1,075	838
Provision for excess and obsolete inventory	578	549
Changes in operating assets & liabilities:		
Accounts receivable	(16,178)	(10,287)
Inventories	(844)	1,143
Prepaid expenses and other current assets	(2,347)	(1,214)
Accounts payable and other current liabilities	3,049	1,082
Deferred revenue	2,085	226
Income taxes	2	30
Other assets and liabilities	(749)	(5,364)
Net cash used in operating activities	(2,668)	(10,181)
Cash flows from investing activities		
Expenditures for property, plant and equipment	(1,116)	(1,275)
Net cash used in investing activities	(1,116)	(1,275)
Cash flows from financing activities		
Net settlement on restricted stock grants	(286)	(2)
Proceeds from exercise of stock options	2,531	194
Net cash provided by financing activities	2,245	192
Effect of exchange rate changes on cash and cash equivalents	105	(127)
Net decrease in cash, cash equivalents and restricted cash	(1,434)	(11,391)
Cash, cash equivalents and restricted cash at beginning of period	77,655	85,825
Cash, cash equivalents and restricted cash at end of period	<u>\$ 76,221</u>	<u>\$ 74,434</u>

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 period 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, 2016 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, 2016.

Note 2. 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 2016 Annual Report on Form 10-K.

The Company recognized stock-based compensation expense of \$1.1 million and \$0.8 million for the three month periods ended March 31, 2017 and 2016, respectively. These amounts include compensation expense related to restricted stock units and non-qualified stock options.

In the three month periods ended March 31, 2017 and 2016, the Company issued 0.5 million and 0.1 million shares of common stock, respectively, in relation to stock option exercises and vesting of restricted stock units. In the three month periods ended March 31, 2017 and 2016, the Company received proceeds of \$2.5 million and \$0.2 million, respectively, in connection with the exercise of stock options.

Note 3. 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 components of net earnings per share are as follows:

	Three months ended March 31,	
	2017	2016
Net income available to common stockholders	\$ 9,506	\$ 1,948
Weighted average common shares outstanding used in computing basic income per share	29,772	29,038
Incremental options and RSUs	2,483	1,482
Weighted average common shares outstanding used in computing diluted net income per share	32,255	30,520
Net income per share		
Basic	\$ 0.32	\$ 0.07
Diluted	\$ 0.29	\$ 0.06

Diluted weighted average common shares outstanding does not include options and restricted stock units outstanding to purchase 0.1 million and 0.9 million common equivalent shares for the three month periods ended March 31, 2017 and 2016, respectively, as their effect would have been anti-dilutive.

Note 4. Accumulated Other Comprehensive Loss

The following table presents the changes in accumulated other comprehensive income (loss), net of tax, by component for the three months ended March 31, 2017:

	Foreign currency	Defined benefit pension plan	Total
	(in thousands)		
Balance at December 31, 2016	\$ (1,591)	\$ (688)	\$ (2,279)
Other comprehensive income and pension reclassification	1,915	28	1,943
Balance at March 31, 2017	\$ 324	\$ (660)	\$ (336)

Note 5. Cash, cash equivalents and restricted cash

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the statement of financial position that sum to the total of the same such amounts shown in the statement of cash flows.

	March 31,	
	2017	2016
	(dollars in thousands)	
Cash and cash equivalents	\$ 69,429	\$ 67,571
Long-term restricted cash	6,792	6,863
Total cash, cash equivalents and long-term restricted cash	\$ 76,221	\$ 74,434

The restricted cash balances of \$6.8 million as of March 31, 2017 relates to a \$5.9 million letter of credit associated to the security deposit for the sale leaseback transaction, a \$0.8 million letter of credit relating to workers' compensation insurance and a \$0.1 million deposit relating to customs activity. The restricted cash balance of \$6.9 million as of March 31, 2016 includes the \$5.9 million letter of credit associated to the security deposit for the sale leaseback transaction, a \$0.9 million letter of credit relating to workers' compensation insurance and a \$0.1 million deposit relating to customs activity.

Note 6. Inventories, net

The components of inventories are as follows:

	March 31, 2017	December 31, 2016
	(in thousands)	
Raw materials	\$ 78,055	\$ 82,263
Work in process	19,892	14,117
Finished goods (completed systems)	17,688	17,473
Inventories, net	<u>\$ 115,635</u>	<u>\$ 113,853</u>

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 March 31, 2017 and December 31, 2016, inventories are stated net of inventory reserves of \$8.6 million and \$8.8 million, respectively.

Note 7. 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:

	Three months ended March 31,	
	2017	2016
	(in thousands)	
Balance at January 1 (beginning of year)	\$ 2,666	\$ 3,555
Warranties issued during the period	1,166	921
Settlements made during the period	(454)	(1,306)
Changes in estimate of liability for pre-existing warranties during the period	(254)	365
Balance at March 31 (end of period)	<u>\$ 3,124</u>	<u>\$ 3,535</u>
Amount classified as current	\$ 2,748	\$ 3,288
Amount classified as long-term	376	247
Total warranty liability	<u>\$ 3,124</u>	<u>\$ 3,535</u>

Note 8. Fair Value Measurements

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

	March 31, 2017			Total
	Level 1	Level 2	Level 3	
Fair Value Measurements				
(in thousands)				
Assets				
Cash equivalents:				
Money market funds	\$ 53,164	\$ —	\$ —	\$ 53,164

	December 31, 2016			Total
	Level 1	Level 2	Level 3	
Fair Value Measurements				
(in thousands)				
Assets				
Cash equivalents:				
Money market funds	\$ 54,170	\$ —	\$ —	\$ 54,170

(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 9. Financing Arrangements

Sale Leaseback Obligation

On January 30, 2015, the Company sold its corporate headquarters facility for \$48.9 million. As part of the sale, the Company also entered into a 22-year lease agreement. The sale leaseback is accounted for as a financing arrangement for financial reporting and, as such, the Company has recorded a financing obligation of \$47.7 million as of March 31, 2017. 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. Upon the termination of a credit facility in October 2015, this letter of credit was cash collateralized.

Note 10. 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, 2016, the Company had \$124.0 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 2017, the statute of limitations associated with tax positions previously taken by the Company expired. The related tax reserve of \$0.3 million and accrued interest of \$0.2 million that had been recorded were reversed during the three months ended March 31, 2017.

Note 11. Concentration of Risk

For the three months ended March 31, 2017, four customers accounted for 19.2%, 16.6%, 16.4% and 16.3% of consolidated revenue, respectively. For the three months ended March 31, 2016, three customers accounted for 20.8%, 13.4% and 13.2%, of consolidated revenue, respectively.

At March 31, 2017, three customers accounted for 24.9%, 21.5% and 12.7% of consolidated accounts receivable, respectively. At December 31, 2016, four customers accounted for 22.0%, 12.3%, 12.0% and 10.6% of accounts receivable, respectively.

Note 12. 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 13. Recent Accounting Guidance

Accounting Standards or Updates Adopted

In July 2015, the FASB issued Accounting Standards Update (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 changes 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 prospective adoption of this ASU in the first quarter of 2017 did not have a material impact on our 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. The amended guidance eliminates the requirement to record excess tax benefits as a reduction in current taxes payable and an increase to additional paid-in capital. The Company adopted this ASU in the first quarter of 2017.

The prospective adoption associated with excess tax benefits resulted in the generation of approximately \$1.2 million of deferred tax assets relating to federal and state net operating losses that are fully offset by a corresponding increase in the valuation allowance. As a result, there was no adjustment to accumulated deficit.

The retrospective adoption of the presentation of employee taxes paid on the statement of cash flows when an employer withholds shares for tax withholding purposes is presented as a financing activity. This resulted in a \$0.3 million and a two thousand dollar reduction in net cash provided by financing activities for the three month periods ended March 31, 2017 and 2016, respectively. Prior to adoption, these amounts were reflected within cash flows from operating activities.

The Company has also elected to continue to estimate a forfeiture rate associated with our stock-based awards and related expense.

In November 2016, the FASB issued ASU 2016-18, "*Statement of Cash Flows (Topic 203): Restricted Cash (a consensus of the FASB Emerging Issues Task Force)*." This ASU requires the statement of cash flows to explain the change during the period in the total cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents are to be included with cash and cash equivalents when reconciling the beginning of period and end of period amounts shown on the statement of cash flows. The retrospective adoption of this ASU in the first quarter of 2017 resulted in \$6.9 million of restricted cash being included in cash, cash equivalents and restricted cash balances on the statement of cash flows for the periods presented. Please see Note 5 for additional information.

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 evaluating the method of adoption and assessing the potential impact the adoption of these standards 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 August 2016, the FASB issued ASU No. 2016-15 *“Classification of Certain Cash Receipts and Cash Payments.”* The ASU is intended to add or clarify guidance on the classification of certain receipts and payments in the statement of cash flows and to eliminate the diversity in practice related to such classifications. The guidance in ASU 2016-15 is required for annual reporting periods beginning after December 15, 2017, with early adoption permitted. We are currently evaluating the impact of ASU 2016-15 on the consolidated financial statements and disclosures.

In March 2017, the FASB issued ASU No. 2017-07 *“Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost.”* The ASU is intended to improve the presentation of net periodic pension cost and net periodic postretirement benefit cost. The amendment applies to all entities offering defined benefit pension plan, other postretirement benefit plans, or other types of benefits accounted for under Topic 715. The amendments in the ASU require an employer to report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. The amendments in this ASU are effective for public business entities for annual periods beginning after December 15, 2017, including interim periods within the annual period. The amendments in this ASU should be applied retrospectively for the presentation of the service cost component and the other components of net periodic pension cost and net periodic postretirement benefit cost in the income statement and prospectively, on and after the effective date, for the capitalization of the service cost component of net periodic pension cost and net periodic postretirement benefit in assets. We are currently evaluating the impact of ASU 2017-07 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, 2016, 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 ten largest customers accounted for 85.4% of total revenue for the three months ended March 31, 2017.

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.

In the first quarter of 2017, we delivered solid financial results driven by higher Purion system sales and strong gross margin performance. 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.

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, 2016 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, 2016.

Results of Operations

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

	Three months ended March 31,	
	2017	2016
Revenue:		
Product	94.3 %	92.1 %
Services	5.7	7.9
Total revenue	<u>100.0</u>	<u>100.0</u>
Cost of revenue:		
Product	53.9	59.6
Services	6.1	5.7
Total cost of revenue	<u>60.0</u>	<u>65.3</u>
Gross profit	40.0	34.7
Operating expenses:		
Research and development	11.4	12.8
Sales and marketing	8.1	8.8
General and administrative	8.1	8.9
Restructuring charges	—	0.4
Total operating expenses	<u>27.6</u>	<u>30.9</u>
Income from operations	12.4	3.8
Other (expense) income:		
Interest income	0.1	0.1
Interest expense	(1.3)	(1.6)
Other, net	(0.2)	(0.1)
Total other expense	<u>(1.4)</u>	<u>(1.6)</u>
Income before income taxes	11.0	2.2
Income tax provision (benefit)	—	(0.7)
Net income	<u>11.0 %</u>	<u>2.9 %</u>

Revenue

The following table sets forth our revenue:

	Three months ended March 31,		Period-to-Period Change	
	2017	2016	\$	%
Revenue:				
Product	\$ 81,978	\$ 62,175	\$ 19,803	31.9 %
Percentage of revenue	94.3 %	92.1 %		
Services	4,915	5,346	(431)	(8.1)%
Percentage of revenue	5.7 %	7.9 %		
Total revenue	<u>\$ 86,893</u>	<u>\$ 67,521</u>	<u>\$ 19,372</u>	28.7 %

Three Months Ended March 31, 2017 Compared with Three Months Ended March 31, 2016

Product

Product revenue, which includes system sales, sales of spare parts, product upgrades and used systems was \$82.0 million, or 94.3%, of revenue during the three months ended March 31, 2017, compared with \$62.2 million, or 92.1% of revenue for the three months ended March 31, 2016. The \$19.8 million increase in product revenue for the

three month period ending March 31, 2017, in comparison to the same period in 2016, was primarily driven by an increase 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 March 31, 2017 and December 31, 2016 was \$13.1 million and \$11.0 million, respectively. The increase in deferred revenue is primarily due to the timing of the acceptance of system sales.

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 \$4.9 million, or 5.7% of revenue for the three months ended March 31, 2017, compared with \$5.3 million, or 7.9% of revenue for the three months ended March 31, 2016. 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.

Revenue Categories used by Management

As an alternative to the line item revenue categories discussed above, management also uses revenue categorizations which divide revenue into new systems sales and "aftermarket," meaning sales of spare parts, product upgrades and used systems, combined with the sale of maintenance labor and service contracts and services hours.

Three Months Ended March 31, 2017 Compared with Three Months Ended March 31, 2016

Systems

Included in total revenue of \$86.9 million during the three months ended March 31, 2017 is revenue from sales of new systems of \$55.2 million, or 63.6% of total revenue, compared with \$37.0 million, or 54.8%, of total revenue for the three months ended March 31, 2016. The increase was due to higher sales of our Purion systems sold in the recent quarter.

Aftermarket

Included in total revenue of \$86.9 million during the three months ended March 31, 2017 is revenue from our aftermarket business of \$31.6 million, compared to \$30.5 million for the three months ended March 31, 2016. 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.

Gross Profit / Gross Margin

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

	Three months ended March 31,		Period-to-Period Change	
	2017	2016	\$	%
Gross Profit:				
Product	\$ 35,181	\$ 21,912	\$ 13,269	60.6 %
<i>Product gross margin</i>	42.9 %	35.2 %		
Services	(467)	\$ 1,504	(1,971)	(131.1)%
<i>Services gross margin</i>	(9.5)%	28.1 %		
Total gross profit	<u>\$ 34,714</u>	<u>\$ 23,416</u>	<u>\$ 11,298</u>	48.2 %
Gross margin	40.0 %	34.7 %		

Three Months Ended March 31, 2017 Compared with Three Months Ended March 31, 2016

Product

Gross margin from product revenue was 42.9% for the three months ended March 31, 2017, compared to 35.2% for the three months ended March 31, 2016. The increase in gross margin of 7.7 percentage points is due to higher margins on system sales of 11.4% resulting from a reduction in costs, partially offset by a 3.7% decrease in gross margin due to a reduced mix in higher margin parts and upgrade revenue.

Services

Gross margin from services revenue was (9.5)% for the three months ended March 31, 2017, compared to 28.1% for the three months ended March 31, 2016. The decrease in gross margin in the recent period is primarily attributable to increased costs on service contracts.

Operating Expenses

The following table sets forth our operating expenses:

	Three months ended March 31,		Period-to-Period Change	
	2017	2016	\$	%
Research and development	\$ 9,895	\$ 8,636	\$ 1,259	14.6 %
<i>Percentage of revenue</i>	<i>11.4 %</i>	<i>12.8 %</i>		
Sales and marketing	7,049	5,960	1,089	18.3 %
<i>Percentage of revenue</i>	<i>8.1 %</i>	<i>8.8 %</i>		
General and administrative	7,057	6,042	1,015	16.8 %
<i>Percentage of revenue</i>	<i>8.1 %</i>	<i>8.9 %</i>		
Restructuring charges	—	282	(282)	(100.0)%
<i>Percentage of revenue</i>	<i>— %</i>	<i>0.40 %</i>		
Total operating expenses	<u>\$ 24,001</u>	<u>\$ 20,920</u>	<u>\$ 3,081</u>	<u>14.7 %</u>
<i>Percentage of revenue</i>	<i>27.6 %</i>	<i>30.9 %</i>		

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 \$14.6 million or 60.6%, of our total operating expenses for the three month period ended March 31, 2017. For the three month period ended March 31, 2016, personnel costs were \$11.9 million or 57.7% of our total operating expenses. The higher personnel costs for the three months ended March 31, 2017 are primarily due to increased headcount and incentive plan expense.

Research and Development

	Three months ended March 31,		Period-to-Period Change	
	2017	2016	\$	%
Research and development	\$ 9,895	\$ 8,636	1,259	14.6 %
<i>Percentage of revenue</i>	<i>11.4 %</i>	<i>12.8 %</i>		

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 March 31, 2017 Compared with Three Months Ended March 31, 2016

Research and development expense was \$9.9 million during the three months ended March 31, 2017; a \$1.3 million increase from \$8.6 million during the three months ended March 31, 2016. The increase is primarily due to an investment in increased headcount to support the development of new Purion products and incentive plan expense.

Sales and Marketing

	Three months ended March 31,		Period-to-Period Change	
	2017	2016	\$	%
Sales and marketing	\$ 7,049	\$ 5,960	\$ 1,089	18.3 %
Percentage of revenue	8.1 %	8.8 %		

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

Three Months Ended March 31, 2017 Compared with Three Months Ended March 31, 2016

Sales and marketing expense was \$7.0 million during the three months ended March 31, 2017; an increase of \$1.1 million, or 18.3%, compared with \$6.0 million during the three months ended March 31, 2016. The increase is primarily due to an investment in increased headcount to support revenue growth, traveling costs and incentive plan expense.

General and Administrative

	Three months ended March 31,		Period-to-Period Change	
	2017	2016	\$	%
General and administrative	\$ 7,057	\$ 6,042	1,015	16.8 %
Percentage of revenue	8.1 %	8.9 %		

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 March 31, 2017 Compared with Three Months Ended March 31, 2016

General and administrative expense was \$7.1 million during the three months ended March 31, 2017; an increase of \$1.0 million, or 16.8%, compared to \$6.0 million during the three months ended March 31, 2016. The increase is primarily due to increases in stock-based compensation and incentive plan expense.

Restructuring Charges

	Three months ended March 31,		Period-to-period change	
	2017	2016	\$	%
Restructuring charges	\$ —	\$ 282	\$ (282)	(100.0)%
Percentage of revenue	— %	0.4 %		

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 March 31,		Period-to-period change	
	2017	2016	\$	%
	(dollars in thousands)			
Other (expense) income	\$ (1,196)	\$ (1,052)	\$ (144)	(13.7)%
<i>Percentage of revenue</i>	(1.4)%	(1.6)%		

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 and interest expense related to our sale leaseback of our headquarters. Other expense was \$1.2 million for the three months ended March 31, 2017, relatively flat compared with \$1.1 million for the three months ended March 31, 2016. During both of the three month periods ended March 31, 2017 and 2016, the Company recorded \$1.3 million in deemed interest expense associated with the sale leaseback of our headquarters in Beverly, which is being accounted for as a financing obligation. Included in other (expense) income was a reversal of accrued interest of \$0.2 million associated with the reversal of a tax reserve.

During the three month periods ended March 31, 2017 and 2016, 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 March 31,		Period-to-period change	
	2017	2016	\$	%
	(dollars in thousands)			
Income tax	\$ 11	\$ (504)	\$ 515	(102.2)%
<i>Percentage of revenue</i>	— %	(0.7)%		

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 2017, the statute of limitations associated with tax positions previously taken by the Company expired. The related tax reserve of \$0.3 million and accrued interest of \$0.2 million were reversed during the three months ended March 31, 2017.

Liquidity and Capital Resources

The Company had \$69.4 million in unrestricted cash and cash equivalents at March 31, 2017, in addition to \$6.8 million in restricted cash, primarily comprised of the \$5.9 million security deposit under the lease on our headquarters. 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 three months ended March 31, 2017, the Company used \$2.7 million of cash in operating activities. This use of cash was predominately driven by increased system orders from customers resulting in increases in accounts receivable, inventories, prepaid expenses, other current assets and other assets and liabilities over the period to support operations. In comparison, during the three months ended March 31, 2016, the Company used \$10.2 million of cash in operating activities.

Investing activities for the three months ended March 31, 2017 and 2016 generated cash outflows of \$1.1 million and \$1.3 million, respectively, used for capital expenditures.

Financing activities for the three months ended March 31, 2017 provided net cash of \$2.2 million, primarily relating to the proceeds from the exercise of stock options. In comparison, financing activities for the three months ended March 31, 2016 provided net cash of \$0.2 million, primarily due to proceeds from the exercise of stock options.

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 March 31, 2017 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, 2016.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

As of March 31, 2017, 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, 2016.

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 March 31, 2017 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 March 31, 2017, 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, 2016.

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 February 15, 2017. Incorporated by reference to Exhibit 10.2 of the Company's report on Form 10-K for the year ended December 31, 2016 filed with the Commission on March 14, 2017.
31.1	Certification of the Principal Executive Officer under Exchange Act Rule 13a-14(a)/15d-14(a) (Section 302 of the Sarbanes-Oxley Act), dated May 5, 2017. Filed herewith.
31.2	Certification of the Principal Financial Officer under Exchange Act Rule 13a-14(a)/15d-14(a) (Section 302 of the Sarbanes-Oxley Act), dated May 5, 2017. Filed herewith.
32.1	Certification of the Principal Executive Officer pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code (Section 906 of the Sarbanes-Oxley Act), dated May 5, 2017. Filed herewith.
32.2	Certification of the Principal Financial Officer pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code (Section 906 of the Sarbanes-Oxley Act), dated May 5, 2017. Filed herewith.
101	The following materials from the Company's Form 10-Q for the quarter ended March 31, 2017, 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.

DATED: May 5, 2017

AXCELIS TECHNOLOGIES, INC.

By: /s/ KEVIN J. BREWER

Kevin J. Brewer
Executive Vice President and Chief Financial Officer
Duly Authorized Officer and Principal Financial Officer

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

I, Mary G. Puma, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Axcelis Technologies, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the 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: May 5, 2017

/s/ MARY G. PUMA

Mary G. Puma,
President and Chief Executive Officer

**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: May 5, 2017

/s/ KEVIN J. BREWER

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

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

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

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

IN WITNESS WHEREOF, the undersigned has executed this Certification as of May 5, 2017.

/s/ MARY G. PUMA

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

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

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

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

IN WITNESS WHEREOF, the undersigned has executed this Certification as of May 5, 2017.

/s/ KEVIN J. BREWER

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