AXCELIS TECHNOLOGIES INC Form S-3 November 25, 2013

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As filed with the Securities and Exchange Commission on November 25, 2013.

Registration No. 333-

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

AXCELIS TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

34-1818596

(I.R.S. Employer Identification Number)

108 Cherry Hill Drive Beverly, Massachusetts 01915 (978) 787-4000

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Lynnette C. Fallon
Executive Vice President, Human Resources/Legal and General Counsel
Axcelis Technologies, Inc.
108 Cherry Hill Drive
Beverly, Massachusetts 01915
(978) 787-4000

(Name, address, including zip code, and telephone number, including area code, of agent for service)

with copies to:

Stacie S. Aarestad Edwards Wildman Palmer LLP 111 Huntington Avenue

Boston, Massachusetts 02199 (617) 239-0100

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. o

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ý

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. o

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large accelerated filer o

Accelerated filer ý

Non-accelerated filer o

Smaller reporting company o

(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

| Title of each class of securities to be registered | Amount to be Registered | Proposed Maximum Offering Price Per Unit | Proposed Maximum Aggregate Offering Price | Amount of Registration Fee(1) |
|---|----------------------------|--|---|----------------------------------|
| Common Stock, \$0.001 par value per share | (2) | (3) | (3) | |
| Preferred stock, \$0.001 par value per share | (2) | (3) | (3) | |
| Warrants | (2) | (3) | (3) | |
| Debt Securities | (2) | (3) | (3) | |
| Units | (2) | (3) | (3) | |
| Total | | | \$75,000,000 | \$9,660.00 |

(1) Calculated pursuant to Rule 457(o) under the Securities Act.

There are being registered hereunder such indeterminate number of shares of common stock and preferred stock, such indeterminate principal amount of debt securities, such indeterminate number of warrants to purchase common stock, preferred stock or debt securities, and such indeterminate number of units as shall have an aggregate initial offering price not to exceed \$75,000,000. If any debt securities are issued at an original issued discount, then the offering price of such debt securities shall be in such greater principal amount as shall result in an aggregate initial offering price not to exceed \$75,000,000, less the aggregate dollar amount of all securities previously issued hereunder. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. The proposed maximum initial offering price per unit will be determined, from time to time, by the registrant in connection with the issuance by the registrant of the securities registered hereunder. Pursuant to Rule 457(i), the securities registered also include such indeterminate number of shares of common stock and preferred stock and amount of debt securities as may be issued upon conversion of or exchange for preferred stock or debt securities that provide for conversion or exchange, upon exercise of warrants or pursuant to the antidilution provisions of any such securities. In addition, pursuant to Rule 416 under the Securities Act, the shares being registered hereunder include such indeterminate number of shares of common stock and preferred stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.

The proposed maximum aggregate offering price per class of security will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of security pursuant to General Instruction II.D. of Form S-3 under the Securities Act.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting offers to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, dated November 25, 2013

Axcelis Technologies, Inc.

\$75,000,000

Common stock
Preferred stock
Warrants
Debt Securities
Units

The aggregate initial offering price of the securities that we offer will not exceed \$75,000,000. We will offer the securities in amounts, at prices and on terms to be determined at the time of the offering.

When we offer securities, we will provide you with a prospectus supplement or term sheet describing the specific terms of the specific issue of securities, including the offering price of the securities. You should carefully read this prospectus and the prospectus supplements or term sheets relating to the specific issue of securities together with additional information described under the heading "Where You Can Find More Information" beginning on Page 22 of this prospectus before you decide to invest in any of these securities.

Our common stock is quoted on The NASDAQ Global Select Market under the symbol "ACLS". On November 22, 2013, the last reported sale price for the common stock was \$2.23 per share.

In this prospectus, "Axcelis," "we," "us," and "our" refer to Axcelis Technologies, Inc. and its subsidiaries.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. SEE "RISK FACTORS" ON PAGE 2.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

This prospectus may not be used to sell securities unless it is accompanied by a prospectus supplement.

Prospectus dated

, 2013

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, using a "shelf" registration process. Under this shelf registration process, we may offer to sell any combination of the securities described in this prospectus, either individually or in units, in one or more offerings, with a total value of up to \$75,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of those securities. We also may authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. We may also add, update or change in a prospectus supplement or free writing prospectus any of the information contained in this prospectus or in documents we have incorporated by reference into this prospectus. However, no prospectus supplement will fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness. This prospectus, together with the applicable prospectus supplements, free writing prospectuses and the documents incorporated by reference into this prospectus, includes all material information relating to this offering. You should carefully read this prospectus, the applicable prospectus supplement and the additional information described under "Where You Can Find More Information" before buying securities in this offering.

You should rely only on the information we have provided or incorporated by reference in this prospectus, any prospectus supplement and any related free writing prospectus that we may authorize to be provided to you. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained or incorporated by reference in this prospectus. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any prospectus supplement or related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed or will be filed as exhibits to the registration statement of which this prospectus is a part (or will be incorporated by reference from a current report on Form 8-K, quarterly report on Form 10-Q or annual report on Form 10-K that we file with the SEC), and you may obtain copies of those documents as described below under "Where You Can Find More Information."

AXCELIS TECHNOLOGIES, INC.

Axcelis is headquartered in Beverly, Massachusetts, and has been providing innovative, high-productivity solutions for the semiconductor industry for over 35 years. Axcelis is dedicated to developing enabling process applications through the design, manufacture and complete life cycle support of ion implantation, one of the most critical and enabling steps in the integrated circuit manufacturing process. Our principal executive offices are located at 108 Cherry Hill Drive, Beverly, Massachusetts 01915, and our telephone number there is (978) 787-4000.

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RISK FACTORS

An investment in our common stock involves a high degree of risk. You should carefully consider the risk factors contained in a prospectus supplement as well as those set forth in our most recently filed periodic reports filed with the SEC, including our Annual Report on Form 10-K for the year ended December 31, 2012, as revised or supplemented by our quarterly reports on Form 10-Q, each of which are on file with the SEC and are incorporated by reference into this prospectus. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus or include in any applicable prospectus supplement. The risks described in these documents are not the only ones we face, but those that we consider to be material. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section below entitled "Forward-Looking Statements."

FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference in this prospectus include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Any statement that is not a statement of historical fact should be considered a forward-looking statement. We often use words or phrases of expectation or uncertainty like "believe," "anticipate," "plan," "expect," "intent," "project," "future," "may," "will," "could," "would" and similar words to help identify forward-looking statements. Examples of forward-looking statements include statements regarding our future financial results, operating results, business strategies, projected costs, product development or future sales, competitive positions and plans and objectives of management for future operations.

We have based these forward-looking statements on our current expectations and projections about future events. However, they are subject to various risks and uncertainties, many of which are outside our control, including the timing of orders and shipments, the conversion of orders to revenue in any particular quarter, or at all, the continuing demand for semiconductor equipment, relative market growth, continuity of business relationships with and purchases by major customers, competitive pressure on sales and pricing, increases in material and other production costs that cannot be recouped in product pricing, global economic, political and financial conditions, and the information incorporated herein under the caption "Risk Factors." Accordingly, our actual results or financial condition could differ materially and adversely from those discussed in, or implied by, these forward-looking statements.

All later written and oral forward-looking statements attributable to us or a person acting on our behalf are expressly qualified in their entirety by the applicable cautionary statements. Each forward-looking statement speaks only as of the date on which it is made, and, except to the extent required by federal securities laws, we undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

We caution you not to place undue reliance on our forward-looking statements. You should carefully read this entire prospectus and the documents incorporated by reference in this prospectus, particularly the section entitled "Risk Factors."

USE OF PROCEEDS

We intend to use the net proceeds from the sale of any securities offered under this prospectus for general corporate purposes and/or as indicated in the applicable prospectus supplement. Such purposes may include working capital, capital expenditures, repayment and refinancing of debt, the acquisition of companies or businesses, stock repurchases and the payment of dividends. We have not determined the amount of net proceeds to be used specifically for any such purposes. As a result, management will retain broad discretion over the allocation of the net proceeds. We expect to temporarily invest the net proceeds in short-term investments until they are used for their intended purpose.

RATIO OF EARNINGS TO FIXED CHARGES

The following table sets forth our ratio of earnings to fixed charges and the dollar amount of the coverage deficiency, if any, for each of the periods indicated. For purposes of this calculation, "earnings" consist of net (loss) from continuing operations plus fixed charges. "Fixed charges" means the sum of interest expense and an estimate of the interest portion of rental expense under operating leases. We have not issued preferred stock and, accordingly, no preferred stock dividends were declared or paid for any of the periods presented.

| | Year Ended | | | Nine Months Ended | | |
|------------------------------------|------------------|-----------------|------------------|----------------------|------------------|-----------------------|
| (dollars in millions) | Dec. 31, 2008 | Dec. 31 2009 | Dec. 31, 2010 | Dec. 31, 2011 | Dec. 31, 2012 | September 30, 2013 |
| Ratio of Earnings to Fixed Charges | (A) | (A) | (A) | 37.4 | (A) | (A) |
| Coverage Deficiency | \$ 179.6 | \$ 67.4 | \$ 13.1 | | \$ 30.8 | \$ 15.2 |

(A)

Our earnings were insufficient to cover fixed charges.

This information should be read in conjunction with our consolidated financial statements and the accompanying notes incorporated by reference in this prospectus.

DESCRIPTION OF CAPITAL STOCK

Our authorized capital stock currently consists of 300,000,000 shares of common stock, par value \$0.001 per share, and 30,000,000 shares of preferred stock, \$0.001 par value per share. As of November 15, 2013, approximately 109,829,953 shares of common stock were issued and outstanding and as of September 30, 2013, an aggregate of approximately 22,875,859 shares were reserved for issuance under outstanding restricted stock units and options to purchase common stock. No shares of preferred stock were outstanding.

The following summary of certain provisions of our common and preferred stock does not purport to be complete. You should refer to our amended and restated certificate of incorporation ("certificate of incorporation") and by-laws, which are filed as exhibits to the registration statement of which this prospectus is a part. The summary below is also qualified by provisions of applicable law.

Common Stock

Holders of common stock are entitled to one vote per share on matters on which our stockholders vote. There are no cumulative voting rights. Holders of common stock are entitled to receive dividends, if declared by our board of directors, out of funds that we may legally use to pay dividends. See "Dividend Policy." If we liquidate or dissolve, holders of common stock are entitled to share ratably in our assets once our debts and any liquidation preference owed to holders of preferred stock are paid. All shares of common stock that are outstanding as of the date of this prospectus are fully-paid and nonassessable.

Preferred Stock

We are currently authorized to issue 30,000,000 shares of preferred stock, of which 3,000,000 shares have been designated as Series A Participating Preferred Stock. Our board of directors has the authority to issue the remaining shares of preferred stock in one or more series and to fix the rights of each series. Our board would fix the designations, voting powers, preferences and rights of the preferred stock of each series, as well as the qualifications, limitations or restrictions thereof, in a certificate of designation relating to that series. We would file as an exhibit to the registration statement of which this prospectus is a part, or would incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. This description would include the following items, as applicable:

| the title and stated value; |
|---|
| the number of shares we are offering; |
| the liquidation preference per share; |
| the purchase price; |
| the dividend rate, period and payment date and method of calculation for dividends; |
| whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate; |
| the procedures for any auction and remarketing, if any; |
| the provisions for a sinking fund, if any; |

the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;

any listing of the preferred stock on any securities exchange or market;

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whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;

whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;

voting rights, if any;

preemptive rights, if any;

restrictions on transfer, sale or other assignment, if any;

whether interests in the preferred stock will be represented by depositary shares;

a discussion of any material U.S. federal income tax considerations applicable to the preferred stock;

the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;

any limitations on the issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

The General Corporation Law of the State of Delaware, our state of incorporation, provides that the holders of preferred stock will have the right to vote separately as a class (or, in some cases, as a series) on an amendment to our certificate of incorporation if the amendment would change the par value or, unless the certificate of incorporation provided otherwise, the number of authorized shares of the class or change the powers, preferences or special rights of the class or series so as to adversely affect the class or series, as the case may be. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

We believe the power to issue preferred stock will provide our board of directors with flexibility in connection with certain possible corporate transactions. The issuance of preferred stock could, however, adversely affect the voting power of holders of our common stock, restrict their rights to receive payment upon liquidation, and have the effect of delaying, deferring, or preventing a change in control. We have no present plans to issue any shares of preferred stock.

Dividend Policy

We have never declared or paid cash dividends on our capital stock. We currently intend to retain our future earnings, if any, for use in our business and therefore do not anticipate paying cash dividends in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs and plans for expansion. In addition, our bank credit facilities currently restrict our ability to pay dividends.

Delaware Anti-Takeover Law

We are subject to Section 203 of the Delaware General Corporation Law, an anti-takeover law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the date the person became an interested stockholder, unless the business combination or the transaction in which the person became an interested

stockholder is approved in a prescribed manner. Generally, a "business

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combination" includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. Generally, an "interested stockholder" is a person who, together with affiliates and associates, owns or within three years before the determination of interested stockholder status, did own, 15% or more of the corporation's voting stock. The existence of this provision may have an anti-takeover effect with respect to transactions not approved in advance by our board of directors, including discouraging attempts that might result in a premium over the market price for the outstanding shares of our common stock.

Charter and By-law Provisions

In addition to the board of directors' ability to issue shares of preferred stock, our certificate of incorporation and by-laws contain the following provisions that may have the effect of discouraging unsolicited acquisition proposals or making more difficult the removal of our incumbent directors and officers (but that are designed to encourage persons seeking to acquire control of us first to negotiate with our board of directors). In each case subject to the rights of the holders of any series of preferred stock:

special meetings of stockholders may only be called by the Chief Executive Officer, Chairman of the Board or board of directors;

stockholders do not have the power to take any action by written consent without a meeting;

the board of directors may enlarge the size of the board and has the right to fill vacancies;

directors may be removed only (a) for cause by holders of a majority of the outstanding shares of voting stock and (b) without cause by holders of at least 75% of the outstanding shares of voting stock;

certain provisions of the certificate of incorporation may only be changed by an affirmative vote of 75% of our outstanding capital stock, in addition to any other vote required by law; and

a stockholder may not nominate any candidate for the board of directors at any annual or special meeting, or bring any other business before an annual meeting, unless that stockholder notifies us of its intention a specified period in advance and provides us with certain required information.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is ComputershareTrust Company, N.A.

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DESCRIPTION OF DEBT SECURITIES

If we issue any debt securities offered by this prospectus and any accompanying prospectus supplement, we would issue them under an indenture to be entered into by Axcelis and a trustee to be identified in the applicable prospectus supplement. The terms of the debt securities would include those stated in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as in effect on the date of the indenture. We have filed a copy of the proposed form of indenture as an exhibit to the registration statement in which this prospectus is included. Each indenture would be subject to and governed by the terms of the Trust Indenture Act of 1939.

We may offer under this prospectus up to \$75,000,000 aggregate principal amount of debt securities; or if debt securities are issued at a discount, or in a foreign currency, foreign currency units or composite currency, the principal amount as may be sold for an initial public offering price of up to \$75,000,000. Unless otherwise specified in the applicable prospectus supplement, the debt securities would represent direct, unsecured obligations of Axcelis that would rank equally with all of our other unsecured indebtedness and would be effectively subordinated to all of our secured debts.

The following statements relating to the debt securities and the indenture are summaries and do not purport to be complete, and are subject in their entirety to the detailed provisions of the indenture.

General

multiple thereof;

We may issue the debt securities in one or more series with the same or various maturities, at par, at a premium, or at a discount. We will describe the particular terms of each series of debt securities in a prospectus supplement relating to that series, which we will file with the SEC. To review the terms of a series of debt securities, you must refer to both the prospectus supplement for the particular series and to the description of debt securities in this prospectus.

The prospectus supplement would set forth the following terms of the debt securities in respect of which this prospectus is delivered:

(1) the title: (2)the aggregate principal amount; (3) the issue price or prices (expressed as a percentage of the aggregate principal amount thereof); (4) any limit on the aggregate principal amount; (5) the date or dates on which principal is payable; (6) the interest rate or rates (which may be fixed or variable) or, if applicable, the method used to determine the rate or rates; (7) the date or dates from which the interest, if any, will be payable and any regular record date for the interest payable; (8) the place or places where principal and, if applicable, premium and interest, is payable; (9) the terms and conditions upon which Axcelis may, or the holders may require Axcelis to, redeem or repurchase the debt securities: (10)the denominations in which the debt securities may be issuable, if other than denominations of \$1,000 or any integral

(11) whether the debt securities are to be issuable in the form of certificated debt securities (as described below) or global debt securities (as described below);

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- (12) the portion of principal amount that will be payable upon declaration of acceleration of the maturity date if other than the principal amount of the debt securities;
- (13) the currency of denomination;
- (14) the designation of the currency, currencies or currency units in which payment of principal and, if applicable, premium and interest, will be made;
- if payments of principal and, if applicable, premium or interest, on the debt securities are to be made in one or more currencies or currency units other than the currency of denomination, the manner in which the exchange rate with respect to these payments will be determined;
- if amounts of principal and, if applicable, premium and interest may be determined (a) by reference to an index based on a currency or currencies other than the currency of denomination or designation or (b) by reference to a commodity, commodity index, stock exchange index or financial index, then the manner in which these amounts will be determined;
- (17) the provisions, if any, relating to any security provided for the debt securities;
- any addition to or change in the covenants and/or the acceleration provisions described in this prospectus or in the indenture;
- any events of default;
- (20) the terms and conditions for conversion into or exchange for shares of common stock or preferred stock;
- (21) any other terms, which may modify or delete any provision of the indenture insofar as it applies to that series;
- (22) any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents; and
- (23) the terms and conditions, if any, upon which the debt securities shall be subordinated in right of payment to other indebtedness of Axcelis.

We may issue discount debt securities that provide for an amount less than the stated principal amount to be due and payable upon acceleration of the maturity of the debt securities in accordance to the terms of the indenture. We may also issue debt securities in bearer form, with or without coupons. If we issue discount securities or debt securities in bearer form, we would describe United States federal income tax considerations and other special considerations that apply to the debt securities in the applicable prospectus supplement.

We may issue debt securities denominated in or payable in a foreign currency or currencies or a foreign currency unit or units. If we do so, we would describe the restrictions, elections, general tax considerations, specific terms and other information with respect to the issue of debt securities and the foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Exchange and/or Conversion Rights

If we issue debt securities that may be exchanged for or converted into shares of common stock or preferred stock, we would describe the terms of exchange or conversion in the prospectus supplement relating to those debt securities.

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Transfer and Exchange

We may issue debt securities that would be represented by either:

- (1)
 "book-entry securities," which means that there will be one or more global securities registered in the name of The Depository Trust Company, as depository, or a nominee of the depository; or
- (2) "certificated securities," which means that they will be represented by a certificate issued in definitive registered form.

We would specify in the prospectus supplement applicable to a particular offering whether the debt securities offered will be book-entry or certificated securities. Except as set forth under "Global Debt Securities and Book Entry System" below, book-entry debt securities would not be issuable in certificated form.

Certificated Debt Securities

If you hold certificated debt securities that have been offered by this prospectus, you may transfer or exchange them at the trustee's office or at the paying agency in accordance with the terms of the indenture. You would not be charged a service charge for any transfer or exchange of certificated debt securities, but may be required to pay an amount sufficient to cover any tax or other governmental charge payable in connection with the transfer or exchange.

You may effect the transfer of certificated debt securities and of the right to receive the principal of, premium and/or interest, if any, on your certificated debt securities only by surrendering the certificate representing your certificated debt securities and having us or the trustee issue a new certificate to the new holder.

Global Debt Securities and Book-Entry System

If we decided to issue debt securities in the form of one or more global securities, then we would register the global securities in the name of the depository for the global securities or in the nominee of the depository, and the global securities would be delivered by the trustee to the depository for credit to the accounts of the holders of beneficial interest in the debt securities. Each global security would:

be registered in the name of a depositary, or its nominee, that we would identify in a prospectus supplement;

be deposited with the depositary or nominee or custodian; and

bear any required legends.

No global security may be exchanged in whole or in part for debt securities registered in the name of any person other than the depositary or any nominee unless:

the depositary has notified us that it is unwilling or unable to continue as depositary or has ceased to be qualified to act as depositary;

an event of default has occurred and is continuing with respect to the debt securities of the applicable series; or

any other circumstance described in a prospectus supplement has occurred permitting or requiring the issuance of any such security.

As long as the depositary, or its nominee, is the registered owner of a global security, the depositary or nominee would be considered the sole owner and holder of the debt securities

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represented by the global security for all purposes under the indentures. Except in the above limited circumstances, owners of beneficial interests in a global security would not be:

entitled to have the debt securities registered in their names;

entitled to physical delivery of certificated debt securities; or

considered to be holders of those debt securities under the indenture.

Payments on a global security would be made to the depositary or its nominee as the holder of the global security. Some jurisdictions have laws that require that certain purchasers of securities take physical delivery of such securities in definitive form. These laws may impair the ability to transfer beneficial interests in a global security.

Institutions that have accounts with the depositary or its nominee are referred to as "participants." Ownership of beneficial interests in a global security would be limited to participants and to persons that may hold beneficial interests through participants. The depositary would credit, on its book-entry registration and transfer system, the respective principal amounts of debt securities represented by the global security to the accounts of its participants.

Ownership of beneficial interests in a global security would be shown on and effected through records maintained by the depositary, with respect to participants' interests, or any participant, with respect to interests of persons held by participants on their behalf.

Payments, transfers and exchanges relating to beneficial interests in a global security would be subject to policies and procedures of the depositary. The depositary policies and procedures may change from time to time. Neither any trustee nor we would have any responsibility or liability for the depositary's or any participant's records with respect to beneficial interests in a global security.

The prospectus supplement would describe the specific terms of the depository arrangement for debt securities of a series that are issued in global form. Axcelis and its agents, the trustee, and any of its agents would not have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in the global debt security or for maintaining, supervising or reviewing any records relating to the beneficial ownership interests.

No Protection in the Event of Change of Control

The indenture does not have any covenants or other provisions providing for a put or increased interest or otherwise that would afford holders of debt securities additional protection in the event of a recapitalization transaction, a change of control of Axcelis or a highly leveraged transaction. If we offer any covenants of this type or provisions with respect to any debt securities in the future, we would describe them in the applicable prospectus supplement.

Covenants

Unless otherwise indicated in this prospectus or a prospectus supplement, the debt securities would not have the benefit of any covenants that limit or restrict our business or operations, the pledging of our assets or the incurrence by us of indebtedness. We would describe in the applicable prospectus supplement any material covenants of a series of debt securities.

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Consolidation, Merger and Sale of Assets

We have agreed in the indenture that we would not consolidate with or merge into any other person or convey, transfer, sell or lease our properties and assets substantially as an entirety to any person, unless:

- the person formed by the consolidation or into or with which we are merged or the person to which our properties and assets are conveyed, transferred, sold or leased, is a corporation organized and existing under the laws of the United States, any State thereof or the District of Columbia and, if we are not the surviving person, the surviving person has expressly assumed all of our obligations, including the payment of the principal of and, premium, if any, and interest on the debt securities and the performance of the other covenants under the indenture; and
- immediately after giving effect to the transaction, no event of default, and no event which, after notice or lapse of time or both, would become an event of default, has occurred and is continuing under the indenture.

Events of Default

Unless otherwise specified in the applicable prospectus supplement, the following events would be events of default under the indenture with respect to debt securities of any series:

- (1) we fail to pay any principal of, or premium, if any, when it becomes due;
- (2) we fail to pay any interest within 45 days after it becomes due;
- (3) we fail to observe or perform any other covenant in the debt securities or the indenture for 45 days after written notice from the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of that series; and
- (4) certain events occur involving bankruptcy, insolvency or reorganization of Axcelis or any of our significant subsidiaries.

The trustee may withhold notice to the holders of the debt securities of any series of any default, except in payment of principal or premium, if any, or interest on the debt securities of that series, if the trustee considers it to be in the best interest of the holders of the debt securities of that series to do so.

If an event of default (other than an event of default resulting from certain events of bankruptcy, insolvency or reorganization) occurs, and is continuing, then the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of any series may accelerate the maturity of the debt securities.

If this happens, the entire principal amount of all the outstanding debt securities of that series plus accrued interest to the date of acceleration would be immediately due and payable. At any time after an acceleration, but before a judgment or decree based on the acceleration is obtained by the trustee, the holders of a majority in aggregate principal amount of outstanding debt securities of that series may rescind and annul the acceleration if (1) all events of default (other than nonpayment of accelerated principal, premium or interest) have been cured or waived, (2) all overdue interest and overdue principal has been paid and (3) the rescission would not conflict with any judgment or decree.

If an event of default resulting from certain events of bankruptcy, insolvency or reorganization occurs, the principal, premium and interest amount with respect to all of the debt securities of any series shall be due and payable immediately without any declaration or other act on the part of the trustee or the holders of the debt securities of that series.

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The holders of a majority in principal amount of the outstanding debt securities of a series shall have the right to waive any existing default or compliance with any provision of the indenture or the debt securities of that series and to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, subject to certain limitations specified in the indenture.

No holder of any debt security of a series would have any right to institute any proceeding with respect to the indenture or for any remedy under the indenture, unless:

- (1) the holder gives to the trustee written notice of a continuing event of default;
- (2) the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series make a written request and offer reasonable indemnity to the trustee to institute proceeding as a trustee;
- (3) the trustee fails to institute proceeding within 60 days of the request; and
- the holders of a majority in aggregate principal amount of the outstanding debt securities of that series do not give the trustee a direction inconsistent with their request during the 60-day period.

However, these limitations do not apply to a suit instituted for payment on debt securities of any series on or after the due dates expressed in the debt securities.

Modification and Waiver

From time to time, we and the trustee may, without the consent of holders of the debt securities of one or more series, amend the indenture or the debt securities of one or more series, or supplement the indenture, for certain specified purposes, including:

- (1) to provide that the surviving entity following a change of control of Axcelis permitted under the indenture shall assume all of our obligations under the indenture and debt securities;
- (2) to provide for uncertificated debt securities in addition to certificated debt securities;
- (3) to comply with any requirements of the SEC under the Trust Indenture Act of 1939;
- (4) to cure any ambiguity, defect or inconsistency, or make any other change that does not adversely affect the rights of any holder;
- (5) provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the underwriter; and
- (6) to appoint a successor trustee under the indenture with respect to one or more series.

From time to time we and the trustee may, with the consent of holders of at least a majority in principal amount of the outstanding debt securities, amend or supplement the indenture or the debt securities, or waive compliance in a particular instance by us with any provision of the indenture or the debt securities; but without the consent of each holder affected by the action, we may not modify or supplement the indenture or the debt securities or waive compliance with any provision of the indenture or the debt securities in order to:

(1) reduce the amount of debt securities whose holders must consent to an amendment, supplement, or waiver to the indenture or the debt security;

- (2) reduce the rate of or change the time for payment of interest;
- reduce the principal of or premium on or change the stated maturity;
- (4) make any debt security payable in money other than that stated in the debt security;

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- (5) change the amount or time of any payment required or reduce the premium payable upon any redemption, or change the time before which no redemption of this type may be made;
- (6) waive a default on the payment of the principal of, interest on, or redemption payment; and
- (7) take any other action otherwise prohibited by the indenture to be taken without the consent of each holder affected by that action.

Defeasance and Discharge of Debt Securities and Certain Covenants in Certain Circumstances

The indenture permits us, at any time, to elect to discharge our obligations with respect to one or more series of debt securities by following certain procedures described in the indenture. These procedures would allow us either:

- (1) to defease and be discharged from any and all of our obligations with respect to any debt securities except for the following obligations (which discharge is referred to as "legal defeasance"):
 - (a) to register the transfer or exchange of the debt securities;
 - (b) to replace temporary or mutilated, destroyed, lost or stolen debt securities;
 - (c) to compensate and indemnify the trustee; or
 - (d) to maintain an office or agency in respect of the debt securities and to hold monies for payment in trust; or
- (2) to be released from our obligations with respect to the debt securities under certain covenants contained in the indenture, as well as any additional covenants which may be contained in the applicable prospectus supplement (which release is referred to as "covenant defeasance").

In order to exercise either defeasance option, we must deposit with the trustee or other qualifying trustee, in trust for this purpose:

- (1) money;
- U.S. Government Obligations (as described below) or Foreign Government Obligations (as described below) which through the scheduled payment of principal and interest in accordance with their terms will provide money; or
- (3) a combination of money and/or U.S. Government Obligations and/or Foreign Government Obligations sufficient in the written opinion of a nationally-recognized firm of independent accountants to provide money;

which in each case specified in clauses (1) through (3) above, provides a sufficient amount to pay the principal of, premium, if any, and interest, if any, on the debt securities of a series, on the scheduled due dates or on a selected date of redemption in accordance with the terms of the indenture.

In addition, defeasance may be effected only if, among other things:

(1)

in the case of either legal or covenant defeasance, we deliver to the trustee an opinion of counsel, as specified in the indenture, stating that as a result of the defeasance neither the trust nor the trustee will be required to register as an investment company under the Investment Company Act of 1940;

in the case of legal defeasance, we deliver to the trustee an opinion of counsel stating that we have received from, or there has been published by, the Internal Revenue Service a ruling to the effect that, or there has been a change in any applicable federal income tax law with the effect that, and the opinion shall confirm that, the holders of outstanding debt securities will

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not recognize income, gain or loss for United States federal income tax purposes solely as a result of the legal defeasance and will be subject to United States federal income tax on the same amounts, in the same manner, including as a result of prepayment, and at the same times as would have been the case if a defeasance had not occurred;

- in the case of covenant defeasance, we deliver to the trustee an opinion of counsel to the effect that the holders of the outstanding debt securities will not recognize income, gain or loss for United States federal income tax purposes as a result of the covenant defeasance and will be subject to United States federal income tax on the same amounts, in the same manner and at the same times as would have been the case if a covenant defeasance had not occurred; and
- (4) certain other conditions described in the indenture are satisfied.

If we fail to comply with our remaining obligations under the indenture and applicable supplemental indenture after a covenant defeasance of the indenture and applicable supplemental indenture, and the debt securities are declared due and payable because of the occurrence of any undefeased event of default, the amount of money and/or U.S. Government Obligations and/or Foreign Government Obligations on deposit with the trustee could be insufficient to pay amounts due under the debt securities of that series at the time of acceleration. We would, however, remain liable in respect of these payments.

The term "U.S. Government Obligations" as used in the above discussion means securities which are direct obligations of or non-callable obligations guaranteed by the United States of America for the payment of which obligation or guarantee the full faith and credit of the United States of America is pledged.

The term "Foreign Government Obligations" as used in the above discussion means, with respect to debt securities of any series that are denominated in a currency other than U.S. dollars (1) direct obligations of the government that issued or caused to be issued the currency for the payment of which obligations its full faith and credit is pledged or (2) obligations of a person controlled or supervised by or acting as an agent or instrumentality of that government the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by that government, which in either case under clauses (1) or (2), are not callable or redeemable at the option of the issuer.

Regarding the Trustee

We would identify the trustee with respect to any series of debt securities in the prospectus supplement relating to the debt securities. You should note that if the trustee becomes a creditor of Axcelis, the indenture and the Trust Indenture Act of 1939 limit the rights of the trustee to obtain payment of claims in certain cases, or to realize on certain property received in respect of certain claims, as security or otherwise. The trustee and its affiliates may engage in, and would be permitted to continue to engage in, other transactions with us and our affiliates. If, however, the trustee, acquires any "conflicting interest" within the meaning of the Trust Indenture Act of 1939, it must eliminate the conflict or resign.

The holders of a majority in principal amount of the then outstanding debt securities of any series may direct the time, method and place of conducting any proceeding for exercising any remedy available to the trustee. If an event of default occurs and is continuing, the trustee, in the exercise of its rights and powers, must use the degree of care and skill of a prudent person in the conduct of his or her own affairs. Subject to this provision, the trustee would be under no obligation to exercise any of its rights or powers under the indenture at the request of any of the holders of the debt securities, unless they have offered to the trustee reasonable indemnity or security.

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DESCRIPTION OF WARRANTS

General

We may issue warrants to purchase debt securities (which we refer to as debt warrants), preferred stock (which we refer to as preferred stock warrants) or common stock (which we refer to as common stock warrants). Any of these warrants may be issued independently or together with any other securities offered by this prospectus and may be attached to or separate from the other securities. If warrants are issued, they would be issued under warrant agreements to be entered into between us and a bank or trust company, as warrant agent, all of which would be described in the prospectus supplement relating to the warrants being offered.

Debt Warrants

We would describe the terms of debt warrants offered in the applicable prospectus supplement, the warrant agreement relating to the debt warrants and the debt warrant certificates representing the debt warrants, including the following:

- (1) the title;(2) the aggregate number offered;
- their issue price or prices;
- (4)
 the designation, aggregate principal amount and terms of the debt securities purchasable upon exercise, and the procedures and conditions relating to exercise;
- (5) the designation and terms of any related debt securities and the number of debt warrants issued with each security;