

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

SCHEDULE 13D  
(Rule 13d-101)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT  
TO § 240.13d-1(a) AND AMENDMENTS THERETO FILED PURSUANT TO  
§ 240.13d-2(a)

(Amendment No. 1)<sup>1</sup>

Axcelis Technologies, Inc.  
(Name of Issuer)

Common Stock, \$0.001 par value per share  
(Title of Class of Securities)

054540109  
(CUSIP Number)

ERIC SINGER  
VERTEX CAPITAL ADVISORS, LLC  
825 Third Avenue, 33rd Floor  
New York, New York 10022

STEVE WOLOSKY, ESQ.  
OLSHAN FROME WOLOSKY LLP  
Park Avenue Tower  
65 East 55th Street  
New York, New York 10022  
(212) 451-2300  
(Name, Address and Telephone Number of Person  
Authorized to Receive Notices and Communications)

February 9, 2015  
(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box .

*Note:* Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See § 240.13d-7 for other parties to whom copies are to be sent.

<sup>1</sup> The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the *Notes*).

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1	NAME OF REPORTING PERSONS Vertex Opportunities Fund, LP	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) o (b) o	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) o	
6	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER 980,241
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER 980,241
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 980,241	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES o	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) Less than 1%	
14	TYPE OF REPORTING PERSON PN	

1	NAME OF REPORTING PERSONS Vertex Special Opportunities Fund II, LP	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) o (b) o	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC, OO	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) o	
6	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER 6,592,518
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER 6,592,518
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 6,592,518	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES o	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 5.9%	
14	TYPE OF REPORTING PERSON PN	

1	NAME OF REPORTING PERSONS Vertex GP, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) o (b) o	
3	SEC USE ONLY	
4	SOURCE OF FUNDS AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) o	
6	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER 980,241
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER 980,241
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 980,241	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES o	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) Less than 1%	
14	TYPE OF REPORTING PERSON OO	

1	NAME OF REPORTING PERSONS Vertex Special Opportunities GP II, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER 6,592,518
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER 6,592,518
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 6,592,518	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 5.9%	
14	TYPE OF REPORTING PERSON OO	

1	NAME OF REPORTING PERSONS Vertex Capital Advisors, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) o (b) o	
3	SEC USE ONLY	
4	SOURCE OF FUNDS AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) o	
6	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER 7,572,759
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER 7,572,759
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 7,572,759	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES o	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 6.8%	
14	TYPE OF REPORTING PERSON IA	

1	NAME OF REPORTING PERSONS Eric Singer	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER 7,572,759
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER 7,572,759
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 7,572,759	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 6.8%	
14	TYPE OF REPORTING PERSON IN	

1	NAME OF REPORTING PERSONS Edward H. Braun	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS PF, OO	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER 90,000*
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER 90,000*
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 90,000*	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) Less than 1.0%	
14	TYPE OF REPORTING PERSON IN	

\* Includes 80,000 shares underlying stock options that are currently exercisable.



1	NAME OF REPORTING PERSONS Stephen L. Domenik	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER -0-
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER -0-
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON -0-	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0%	
14	TYPE OF REPORTING PERSON IN	

1	NAME OF REPORTING PERSONS Richard J. Faubert	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER -0-
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER -0-
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON -0-	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0%	
14	TYPE OF REPORTING PERSON IN	

1	NAME OF REPORTING PERSONS John T. Kurtzweil	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER -0-
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER -0-
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON -0-	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0%	
14	TYPE OF REPORTING PERSON IN	

1	NAME OF REPORTING PERSONS Peter J. Simone	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*(a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION USA	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER -0-
	8	SHARED VOTING POWER -0-
	9	SOLE DISPOSITIVE POWER -0-
	10	SHARED DISPOSITIVE POWER -0-
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON -0-	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0%	
14	TYPE OF REPORTING PERSON IN	

The following constitutes Amendment No. 1 to Schedule 13D filed by the undersigned (the "Amendment No.1"). This Amendment No. 1 amends the Schedule 13D as specifically set forth herein.

Item 2. Identity and Background.

Item 2 is hereby amended and restated to read as follows:

- (a) This statement is filed by:
- (i) Vertex Opportunities Fund, LP, a Delaware limited partnership ("Vertex Opportunities"), with respect to the Shares directly and beneficially owned by it;
  - (ii) Vertex Special Opportunities II, LP, a Delaware limited partnership ("VSO II"), with respect to the Shares directly and beneficially owned by it;
  - (iii) Vertex GP, LLC, a Delaware limited liability company ("Vertex GP"), as the general partner of Vertex Opportunities;
  - (iv) Vertex Special Opportunities GP II, LLC, a Delaware limited liability company ("VSO GP II"), as the general partner of VSO II;
  - (v) Vertex Capital Advisors, LLC, a Delaware limited liability company ("Vertex Capital"), as the investment manager of each of Vertex Opportunities and VSO II;
  - (vi) Eric Singer, as managing member of each of Vertex GP, VSO GP II and Vertex Capital and as an individual and a nominee for election to the Board of Directors of the Company (the "Board");
  - (vii) Edward H. Braun, an individual and a nominee for election to the Board;
  - (viii) Stephen L. Domenik, an individual and a nominee for election to the Board;
  - (ix) Richard J. Faubert, an individual and a nominee for election to the Board;
  - (x) John T. Kurtzweil, an individual and a nominee for election to the Board; and
  - (xi) Peter J. Simone, an individual and a nominee for election to the Board.

Each of the foregoing is referred to as a "Reporting Person" and collectively as the "Reporting Persons." Each of the Reporting Persons is party to that certain Joint Filing and Solicitation Agreement as further described in Item 6. Accordingly, the Reporting Persons are hereby filing a joint Schedule 13D.

(b) The address of the principal office of each of Vertex Opportunities, VSO II, Vertex GP, VSO GP II, Vertex Capital and Eric Singer is 825 Third Ave. 33<sup>rd</sup> Floor, New York, New York 10022. The address of the principal office of Mr. Braun is 23 East 22nd Street, Apt 11A, New York, New York 10010. The address of the principal office of Mr. Domenik is c/o Sevin Rosen Funds, 421 Kipling Street, Palo Alto, California 94301. The address of the principal office of Mr. Faubert is 14242 S. Canyon Dr., Phoenix, Arizona 85048. The address of the principal office of Mr. Kurtzweil is 713 Yarmouth Road, Raleigh, NC 27607. The address of the principal office of Mr. Simone is 61 Lehigh Road, Wellesley, Massachusetts 02482.

(c) The principal business of Vertex Opportunities is investing in securities. The principal business of Vertex GP is acting as the general partner of Vertex Opportunities. The principal business of VSO II is investing in securities. The principal business of VSO GP II is acting as the general partner of VSO II. The principal business of Vertex Capital is serving as the investment manager to each of Vertex Opportunities and VSO II. The principal occupation of Mr. Singer is serving as the managing member of each of Vertex GP, VSO GP II and Vertex Capital. Mr. Braun is a retired executive currently serving as a director of Veeco Instruments, Inc. The principal occupation of Mr. Domenik is acting as general partner at Sevin Rosen Funds, a venture capital firm. Mr. Faubert is a retired executive currently serving as a director of Electro Scientific Industries, Inc. The principal occupation of Mr. Kurtzweil is serving as an independent consultant. Mr. Simone is a retired executive who also serves as an independent consultant to several private companies and the investment community.

(d) No Reporting Person has, during the last five years, been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) No Reporting Person has, during the last five years, been party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) Each of Vertex Opportunities, Vertex GP, VSO II, VSO GP II and Vertex Capital is organized under the laws of the State of Delaware. Messrs. Singer, Braun, Domenik, Faubert, Kurtzweil and Simone are citizens of the United States of America.

Item 3. Source and Amount of Funds or Other Consideration.

Item 3 is hereby amended and restated to read as follows:

The Shares beneficially owned by each of Vertex Opportunities and VSO II were purchased with working capital in open market purchases, except as otherwise noted, including certain Shares which were acquired as a result of a capital contribution, as set forth in Schedule A, which is incorporated by reference herein. The aggregate purchase price of the 980,241 Shares beneficially owned by Vertex Opportunities is approximately \$1,733,145, excluding brokerage commissions. The aggregate price of the 6,592,518 Shares contributed to and beneficially owned by VSO II is approximately \$13,058,267, excluding brokerage commissions.

The 10,000 Shares beneficially owned by Mr. Braun were purchased with personal funds in open market purchases. The aggregate purchase price of the 10,000 Shares beneficially owned by Mr. Braun is approximately \$15,678, excluding brokerage commissions. The 80,000 Shares underlying stock options that are beneficially owned by Mr. Braun were awarded to him in his capacity as a director of the Issuer.

Item 4. Purpose of Transaction.

Item 4 is hereby amended to add the following:

The Reporting Persons believe that the Issuer has great potential despite its consistent and long-standing underperformance. However, to achieve that potential, the Reporting Persons believe that the Board must be reconstituted with directors that have the experience, the independence, and the shareholder-oriented mindset to oversee and implement the changes necessary to unlock substantial value. Accordingly, on February 9, 2015, the Reporting Persons delivered a letter to the Issuer nominating Eric Singer, Edward H. Braun, Stephen L. Domenik, Richard J. Faubert, John T. Kurtzweil, and Peter J. Simone (the "Nominees") for election to the Board at the Issuer's 2015 annual meeting of stockholders (including any other meeting of stockholders held in lieu thereof, and any adjournments, postponements, reschedulings or continuations thereof, the "Annual Meeting"). The Reporting Persons intend to engage in discussions with management, the Board and stockholders of the Issuer regarding the nomination of directors at the Annual Meeting and the composition of the Issuer's Board generally.

Item 5. Interest in Securities of the Issuer.

Item 5 is hereby amended and restated as follows:

The aggregate percentage of Shares reported owned by each Reporting Person is based upon 112,004,603 Shares outstanding, which is the total number of Shares outstanding as of October 31, 2014 as reported in the Issuer's Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on November 6, 2014.

A. Vertex Opportunities

- (a) As of the close of business on February 6, 2015, Vertex Opportunities beneficially owned 980,241 Shares.

Percentage: Less than 1%

- (b) 1. Sole power to vote or direct vote: -0-  
2. Shared power to vote or direct vote: 980,241  
3. Sole power to dispose or direct the disposition: -0-  
4. Shared power to dispose or direct the disposition: 980,241

- (c) The transactions in the Shares by Vertex Opportunities during the past sixty days, if any, are set forth in Schedule A and are incorporated herein by reference.

B. VSO II

- (a) As of the close of business on February 6, 2015, VSO II beneficially owned 6,592,518 Shares.

Percentage: Approximately 5.9%

- (b) 1. Sole power to vote or direct vote: -0-  
2. Shared power to vote or direct vote: 6,592,518  
3. Sole power to dispose or direct the disposition: -0-  
4. Shared power to dispose or direct the disposition: 6,592,518

- (c) The transactions in the Shares by VSO II during the past sixty days, if any, are set forth in Schedule A and are incorporated herein by reference.

C. Vertex GP

- (a) Vertex GP, as the general partner of Vertex Opportunities, may be deemed the beneficial owner of the 980,241 shares owned by Vertex Opportunities.

Percentage: Less than 1%

- (b) 1. Sole power to vote or direct vote: -0-  
2. Shared power to vote or direct vote: 980,241  
3. Sole power to dispose or direct the disposition: -0-  
4. Shared power to dispose or direct the disposition: 980,241

- (c) Vertex GP has not entered into any transactions in the Shares during the past sixty days. The transactions in the Shares on behalf of Vertex Opportunities during the past sixty days are set forth in Schedule A and are incorporated herein by reference.

D. VSO GP II

- (a) VSO GP II, as the general partner of VSO II, may be deemed the beneficial owner of the 6,592,518 shares owned by VSO II.

Percentage: Approximately 5.9%

- (b) 1. Sole power to vote or direct vote: -0-  
2. Shared power to vote or direct vote: 6,592,518  
3. Sole power to dispose or direct the disposition: -0-  
4. Shared power to dispose or direct the disposition: 6,592,518

- (c) VSO GP II has not entered into any transactions in the Shares during the past sixty days. The transactions in the Shares on behalf of VSO II during the past sixty days are set forth in Schedule A and are incorporated herein by reference.

E. Vertex Capital

- (a) Vertex Capital, as the investment manager of Vertex Opportunities and VSO II, may be deemed the beneficial owner of the (i) 980,241 Shares owned by Vertex Opportunities and (ii) 6,592,518 Shares owned by VSO II.

Percentage: Approximately 6.8%

- (b) 1. Sole power to vote or direct vote: -0-  
2. Shared power to vote or direct vote: 7,572,759  
3. Sole power to dispose or direct the disposition: -0-  
4. Shared power to dispose or direct the disposition: 7,572,759

- (c) Vertex Capital has not entered into any transactions in the Shares during the past sixty days. The transactions in the Shares on behalf of each of Vertex Opportunities and VSO II, during the past sixty days are set forth in Schedule A and are incorporated herein by reference.



F. Eric Singer

- (a) Mr. Singer, as the managing member of Vertex GP, VSO GP II and Vertex Capital, may be deemed the beneficial owner of the (i) 980,241 Shares owned by Vertex Opportunities and (ii) 6,592,518 Shares owned by VSO II.

Percentage: Approximately 6.8%

- (b) 1. Sole power to vote or direct vote: -0-  
2. Shared power to vote or direct vote: 7,572,759  
3. Sole power to dispose or direct the disposition: -0-  
4. Shared power to dispose or direct the disposition: 7,572,759
- (c) Mr. Singer has not entered into any transactions in the Shares during the past sixty days. The transactions in the Shares on behalf of each of Vertex Opportunities and VSO II, during the past sixty days are set forth in Schedule A and are incorporated herein by reference.

G. Edward H. Braun

- (a) As of the close of business on February 6, 2015, Mr. Braun beneficially owned 10,000 Shares and may be deemed to beneficially own an additional 40,000 Shares underlying stock options that are currently exercisable at a purchase price of \$1.60 per Share and 40,000 Shares underlying stock options that are currently exercisable at a purchase price of \$2.74 per Share.

Percentage: Less than 1%

- (b) 1. Sole power to vote or direct vote: -0-  
2. Shared power to vote or direct vote: 90,000  
3. Sole power to dispose or direct the disposition: -0-  
4. Shared power to dispose or direct the disposition: 90,000
- (c) Mr. Braun has not entered into any transactions in the Shares during the past sixty days.

H. Stephen L. Domenik, Richard J. Faubert, John T. Kurtzweil, and Peter J. Simone

- (a) As of the close of business on February 6, 2015, Messrs. Domenik, Faubert, Kurtzweil, and Simone did not own any Shares.

Percentage: 0%

- (b) 1. Sole power to vote or direct vote: -0-  
2. Shared power to vote or direct vote: -0-  
3. Sole power to dispose or direct the disposition: -0-  
4. Shared power to dispose or direct the disposition: -0-
- (c) Messrs. Domenik, Faubert, Kurtzweil, and Simone have not entered into any transactions in the Shares during the past sixty days.

(d) No person other than the Reporting Persons is known to have the right to receive, or the power to direct the receipt of dividends from, or proceeds from the sale of, the Shares.

(e) Not applicable

The filing of this Schedule 13D shall not be construed as an admission that the Reporting Persons are, for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, the beneficial owners of any of the securities reported herein. Each Reporting Person disclaims beneficial ownership of such Shares except to the extent of his or its pecuniary interest therein.

Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer.

Item 6 is hereby amended to add the following:

On February 9, 2015, the Reporting Persons entered into a Joint Filing and Solicitation Agreement pursuant to which, among other things, (i) they agreed to the joint filing on behalf of each of them of statements on Schedule 13D, and any amendments thereto, with respect to the securities of the Issuer, (ii) they agreed to solicit proxies or written consents for the election of the Nominees to the Board at the Annual Meeting (the "Solicitation"), and (iii) Vertex Opportunities agreed to pay directly all pre-approved expenses incurred in connection with the Solicitation. A copy of the Joint Filing and Solicitation Agreement is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

Pursuant to letter agreements, Vertex Opportunities has agreed to indemnify each of Messrs. Braun, Domenik, Faubert, Kurtzweil and Simone against any and all claims of any nature arising from the Solicitation and any related transactions. A form of the indemnification letter agreement is attached hereto as Exhibit 99.2 and is incorporated herein by reference

Item 7. Material to be Filed as Exhibits.

Item 7 is hereby amended to add the following exhibits:

- 99.1 Joint Filing and Solicitation Agreement
- 99.2 Form of Indemnification Agreement
- 99.3 Powers of Attorney

SIGNATURES

After reasonable inquiry and to the best of his knowledge and belief, the undersigned certifies that the information set forth in this statement is true, complete and correct.

Dated: February 9, 2015

Vertex Opportunities Fund, LP

By: Vertex GP, LLC  
General Partner

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

Vertex GP, LLC

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

Vertex Special Opportunities Fund II, LP

By: Vertex Special Opportunities GP II, LLC  
General Partner

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

Vertex Special Opportunities GP II, LLC

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

Vertex Capital Advisors, LLC

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

/s/ Eric Singer  
ERIC SINGER, Individually and as Attorney-in-Fact for Edward H. Braun,  
Stephen L. Domenik, Richard J. Faubert, John T. Kurtzweil, and Peter J.  
Simone

SCHEDULE A

Transactions in Securities of the Issuer During the Past Sixty Days

<u>Nature of the Transaction</u>	<u>Securities Purchased/(Sold)</u>	<u>Price Per Share(\$)</u>	<u>Date of Purchase / Sale</u>
<b><u>VERTEX SPECIAL OPPORTUNITIES FUND, LP</u></b>			
Purchase of Common Stock	50,000	2.4000	12/19/2014
Purchase of Common Stock	4,000	2.4000	01/06/2015
Purchase of Common Stock	26,006	2.5100	01/09/2015
Purchase of Common Stock	90,000	2.5000	01/21/2015

**JOINT FILING AND SOLICITATION AGREEMENT**

WHEREAS, certain of the undersigned are stockholders, direct or beneficial, of Axcelis Technologies, Inc., a Delaware corporation (the “Company”);

WHEREAS, Vertex Opportunities Fund, LP, a Delaware limited partnership (the “Partnership”), Vertex Special Opportunities Fund II, LP, a Delaware limited partnership, Vertex GP, LLC, a Delaware limited liability company, Vertex Special Opportunities GP II, LLC, a Delaware limited liability company, Vertex Capital Advisors, LLC, a Delaware limited liability company, Eric Singer, Edward H. Braun, Stephen L. Domenik, Richard J. Faubert, John T. Kurtzweil, and Peter J. Simone wish to form a group for the purpose of seeking representation on the Board of Directors of the Company (the “Board”) at the 2015 annual meeting of stockholders of the Company (including any other meeting of stockholders held in lieu thereof, and any adjournments, postponements, reschedulings or continuations thereof, the “2015 Annual Meeting”) and for the purpose of taking all other action necessary to achieve the foregoing.

NOW, IT IS AGREED, this 9<sup>th</sup> day of February 2015 by the parties hereto:

1. In accordance with Rule 13d-1(k)(1)(iii) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), each of the undersigned (collectively, the “Group”) agrees to the joint filing on behalf of each of them of statements on Schedule 13D, and any amendments thereto, with respect to the securities of the Company. Each member of the Group shall be responsible for the accuracy and completeness of his/its own disclosure therein, and is not responsible for the accuracy and completeness of the information concerning the other members, unless such member knows or has reason to know that such information is inaccurate. The Partnership or its representative shall provide each member of the Group with copies of all Schedule 13D filings and other public filings to be filed on behalf of such member at least 24 hours prior to the filing or submission thereof.

2. So long as this agreement is in effect, each of the undersigned shall provide written notice to Olshan Frome Wolosky LLP (“Olshan”) of (i) any of their purchases or sales of securities of the Company; or (ii) any securities of the Company over which they acquire or dispose of beneficial ownership. Notice shall be given no later than 24 hours after each such transaction.

3. Each of the undersigned agrees to form the Group for the purpose of (i) soliciting proxies or written consents for the election of the persons nominated by the Group to the Board at the 2015 Annual Meeting, (ii) taking such other actions as the parties deem advisable, and (iii) taking all other action necessary or advisable to achieve the foregoing.

4. The Partnership shall have the right to pre-approve all expenses incurred in connection with the Group’s activities and agrees to pay directly all such pre-approved expenses.

5. Each of the undersigned agrees that any SEC filing, press release or stockholder communication proposed to be made or issued by the Group or any member of the Group in connection with the Group’s activities set forth in Section 3 shall be first approved by the Partnership, or its representatives, which approval shall not be unreasonably withheld.

6. The relationship of the parties hereto shall be limited to carrying on the business of the Group in accordance with the terms of this Agreement. Such relationship shall be construed and deemed to be for the sole and limited purpose of carrying on such business as described herein. Nothing herein shall be construed to authorize any party to act as an agent for any other party, or to create a joint venture or partnership, or to constitute an indemnification. Nothing herein shall restrict any party’s right to purchase or sell securities of the Company, as he/it deems appropriate, in his/its sole discretion, provided that all such sales are made in compliance with all applicable securities laws.

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7. This Agreement may be executed in counterparts, each of which shall be deemed an original and all of which, taken together, shall constitute but one and the same instrument, which may be sufficiently evidenced by one counterpart.

8. In the event of any dispute arising out of the provisions of this Agreement or their investment in the Company, the parties hereto consent and submit to the exclusive jurisdiction of the Federal and State Courts in the State of New York.

9. The parties' rights and obligations under this agreement (other than the rights and obligations set forth in Section 4 and Section 8 which shall survive any termination of this agreement) shall terminate immediately after the conclusion of the activities set forth in Section 3 or as otherwise agreed to by the parties. Notwithstanding the foregoing, any party hereto may terminate his/its obligations under this agreement on 24 hours' written notice to all other parties, with a copy by fax to Steve Wolosky at Olshan, Fax No. (212) 451-2222.

10. Each party acknowledges that Olshan shall act as counsel for both the Group and the Partnership and its affiliates relating to their investment in the Company.

11. The terms and provisions of this agreement may not be modified, waived or amended without the written consent of each of the parties hereto.

12. Each of the undersigned parties hereby agrees that this Agreement shall be filed as an exhibit to a Schedule 13D pursuant to Rule 13d-1(k)(1)(iii) under the Exchange Act.

[Signature pages follow]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the day and year first above written.

VERTEX OPPORTUNITIES FUND, LP

By: Vertex GP, LLC  
General Partner

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

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VERTEX GP, LLC

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

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VERTEX SPECIAL OPPORTUNITIES FUND II, LP

By: Vertex Special Opportunities GP II, LLC  
General Partner

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

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VERTEX SPECIAL OPPORTUNITIES GP II, LLC

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

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VERTEX CAPITAL ADVISORS, LLC

By: /s/ Eric Singer  
Name: Eric Singer  
Title: Managing Member

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/s/ Eric Singer  
ERIC SINGER

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/s/ Edward H. Braun  
EDWARD H. BRAUN

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/s/ Stephen L. Domenik  
STEPHEN L. DOMENIK

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/s/ Richard J. Faubert  
RICHARD J. FAUBERT

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/s/ John T. Kurtzweil  
JOHN T. KURTZWEIL

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**Vertex Opportunities Fund, LP**  
**825 Third Ave, 33rd Floor**  
**New York, New York 10022**

\_\_\_\_\_, 2015

[Nominee Name/Address]

**Re: Axcelis Technologies, Inc.**

Dear [Nominee Name]:

Thank you for agreeing to serve as a nominee for election to the Board of Directors of Axcelis Technologies, Inc., a Delaware corporation (the "Company"), in connection with the proxy solicitation that Vertex Opportunities Fund, LP, a Delaware limited partnership (the "Partnership"), and certain of its affiliates are considering undertaking to nominate and elect directors at the Company's 2015 annual meeting of stockholders, or any other meeting of stockholders held in lieu thereof, and any adjournments, postponements, reschedulings or continuations thereof (the "Solicitation"). Your outstanding qualifications, we believe, will prove a valuable asset to the Company and all of its stockholders. This letter will set forth the terms of our agreement.

The Partnership agrees to indemnify and hold you harmless against any and all claims of any nature arising from the Solicitation and any related transactions, irrespective of the outcome; provided, however, that you will not be entitled to indemnification for claims arising from your gross negligence, willful misconduct, intentional and material violations of law, criminal actions, provision to the Partnership of false or misleading information (including false or misleading information on any questionnaire you are requested to complete by the Partnership), or material breach of the terms of this letter agreement; provided further, that the indemnification and other obligations hereunder shall terminate upon your becoming a director of the Company. This indemnification will include any and all losses, liabilities, damages, demands, claims, suits, actions, judgments, or causes of action, assessments, costs and expenses, including, without limitation, interest, penalties, reasonable attorneys' fees, and any and all reasonable costs and expenses incurred in investigating, preparing for or defending against any litigation, commenced or threatened, any civil, criminal, administrative or arbitration action, or any claim whatsoever, and any and all amounts paid in settlement of any claim or litigation asserted against, resulting, imposed upon, or incurred or suffered by you, directly or indirectly, as a result of or arising from the Solicitation and any related transactions (each, a "Loss").

In the event of a claim against you pursuant to the prior paragraph or the occurrence of a Loss, you shall give the Partnership prompt written notice of such claim or Loss (provided that failure to promptly notify the Partnership shall not relieve the Partnership from any liability which it may have on account of this letter agreement, except to the extent the Partnership shall have been materially prejudiced by such failure). Upon receipt of such written notice, the Partnership will provide you with counsel to represent you. Such counsel shall be reasonably acceptable to you. In addition, you will be reimbursed promptly for all Losses suffered by you and as incurred as provided herein.

The Partnership may not enter into any settlement of any Loss or claim without your consent unless such settlement includes a release of you from any and all liability in respect of such Loss or claim. Notwithstanding anything to the contrary set forth in this letter agreement, the Partnership shall not be responsible for any fees, costs or expenses of separate legal counsel retained by you without the Partnership's prior written approval. In addition, you agree not to enter into any settlement of any Loss or claim without the written consent of the Partnership, which consent will not be unreasonably withheld.

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You hereby agree to keep confidential and not disclose to any party, without the consent of the Partnership, any confidential, proprietary or non-public information (collectively, "Information") that you have heretofore obtained or may obtain in connection with the Solicitation or your service as a nominee hereunder. Notwithstanding the foregoing, Information shall not include any information that is publicly disclosed by the Partnership or its affiliates or any information that you can demonstrate is now, or hereafter becomes, through no act or failure to act on your part, otherwise generally known to the public.

Notwithstanding the foregoing, if you are required by applicable law, rule, regulation or legal process to disclose any Information you may do so provided that you first promptly notify the Partnership so that the Partnership or any of its representatives may seek a protective order or other appropriate remedy or, in the Partnership's sole discretion, waive compliance with the terms of this letter agreement. In the event that no such protective order or other remedy is obtained or the Partnership does not waive compliance with the terms of this letter agreement, you may consult with counsel at the cost of the Partnership and you may furnish only that portion of the Information which you are advised by counsel is legally required to be so disclosed and you will request that the party(ies) receiving such Information maintain it as confidential.

All Information, all copies thereof, and any studies, notes, records, analysis, compilations or other documents prepared by you containing such Information, shall be and remain the property of the Partnership and, upon the request of a representative of the Partnership, all such information shall be returned or, at the Partnership's option, destroyed by you, with such destruction confirmed by you to the Partnership in writing.

This letter agreement shall be governed by the laws of the State of New York, without regard to the principles of the conflicts of laws thereof.

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This letter agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument.

Very truly yours,

VERTEX OPPORTUNITIES FUND, LP

By: Vertex GP, LLC  
General Partner

By: \_\_\_\_\_  
Name: Eric Singer  
Title: Managing Member

**ACCEPTED AND AGREED:**

\_\_\_\_\_  
[Nominee Name]

**POWER OF ATTORNEY**

Know all by these presents, that the undersigned hereby constitutes and appoints Eric Singer, the undersigned's true and lawful attorney-in-fact to take any and all action in connection with (i) the undersigned's beneficial ownership of, or participation in a group with respect to, securities of Axcelis Technologies, Inc., a Delaware corporation (the "Company") directly or indirectly beneficially owned by Vertex Opportunities Fund, LP, a Delaware limited partnership, Vertex Special Opportunities Fund II, LP, a Delaware limited partnership, Vertex GP, LLC, a Delaware limited liability company, Vertex Special Opportunities GP II, LLC, a Delaware limited liability company, Vertex Capital Advisors, LLC, a Delaware limited liability company, and Eric Singer (collectively, the "Group") and (ii) any proxy solicitation of the Group to elect the Group's slate of director nominees to the board of directors of the Company at the 2015 annual meeting of stockholders of the Company (the "Solicitation"). Such action shall include, but not be limited to:

1. executing for and on behalf of the undersigned any Schedule 13D, and amendments thereto, filed by the Group that are required to be filed under Section 13(d) of the Securities Exchange Act of 1934 (the "Exchange Act") and the rules thereunder in connection with the undersigned's beneficial ownership of, or participation in a group with respect to, securities of the Company or the Solicitation;
2. if applicable, executing for and on behalf of the undersigned all Forms 3, 4 and 5 required to be filed under Section 16(a) of the Exchange Act in connection with the undersigned's beneficial ownership of, or participation in a group with respect to, securities of the Company or the Solicitation;
3. performing any and all acts for and on behalf of the undersigned that may be necessary or desirable to complete and execute any such document, complete and execute any amendment or amendments thereto, and timely file such form with the U.S. Securities and Exchange Commission and any stock exchange or similar authority; and
4. taking any other action of any type whatsoever in connection with the Solicitation, including entering into any settlement agreement, that in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

The undersigned hereby grants to such attorney-in-fact full power and authority to do and perform any and every act and thing whatsoever requisite, necessary, or proper to be done in the exercise of any of the rights and powers herein granted, as fully to all intents and purposes as the undersigned might or could do if personally present, with full power of substitution or revocation, hereby ratifying and confirming all that such attorney-in-fact, or such attorney-in-fact's substitutes, shall lawfully do or cause to be done by virtue of this Power of Attorney and the rights and powers herein granted. The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, is not assuming any of the undersigned's responsibilities to comply with Section 13(d), Section 16 or Section 14 of the Exchange Act.

This Power of Attorney shall remain in full force and effect until the undersigned is no longer a member of the Group unless earlier revoked by the undersigned in a signed writing delivered to the foregoing attorneys-in-fact.

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 9th day of February 2015.

/s/ Edward H. Braun  
EDWARD H. BRAUN

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## POWER OF ATTORNEY

Know all by these presents, that the undersigned hereby constitutes and appoints Eric Singer, the undersigned's true and lawful attorney-in-fact to take any and all action in connection with (i) the undersigned's beneficial ownership of, or participation in a group with respect to, securities of Axcelis Technologies, Inc., a Delaware corporation (the "Company") directly or indirectly beneficially owned by Vertex Opportunities Fund, LP, a Delaware limited partnership, Vertex Special Opportunities Fund II, LP, a Delaware limited partnership, Vertex GP, LLC, a Delaware limited liability company, Vertex Special Opportunities GP II, LLC, a Delaware limited liability company, Vertex Capital Advisors, LLC, a Delaware limited liability company, and Eric Singer (collectively, the "Group") and (ii) any proxy solicitation of the Group to elect the Group's slate of director nominees to the board of directors of the Company at the 2015 annual meeting of stockholders of the Company (the "Solicitation"). Such action shall include, but not be limited to:

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4. taking any other action of any type whatsoever in connection with the Solicitation, including entering into any settlement agreement, that in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

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IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 9th day of February 2015.

/s/ Stephen L. Domenik  
STEPHEN L. DOMENIK

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## POWER OF ATTORNEY

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4. taking any other action of any type whatsoever in connection with the Solicitation, including entering into any settlement agreement, that in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

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IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 9th day of February 2015.

/s/ Richard J. Faubert

RICHARD J. FAUBERT

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## POWER OF ATTORNEY

Know all by these presents, that the undersigned hereby constitutes and appoints Eric Singer, the undersigned's true and lawful attorney-in-fact to take any and all action in connection with (i) the undersigned's beneficial ownership of, or participation in a group with respect to, securities of Axcelis Technologies, Inc., a Delaware corporation (the "Company") directly or indirectly beneficially owned by Vertex Opportunities Fund, LP, a Delaware limited partnership, Vertex Special Opportunities Fund II, LP, a Delaware limited partnership, Vertex GP, LLC, a Delaware limited liability company, Vertex Special Opportunities GP II, LLC, a Delaware limited liability company, Vertex Capital Advisors, LLC, a Delaware limited liability company, and Eric Singer (collectively, the "Group") and (ii) any proxy solicitation of the Group to elect the Group's slate of director nominees to the board of directors of the Company at the 2015 annual meeting of stockholders of the Company (the "Solicitation"). Such action shall include, but not be limited to:

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3. performing any and all acts for and on behalf of the undersigned that may be necessary or desirable to complete and execute any such document, complete and execute any amendment or amendments thereto, and timely file such form with the U.S. Securities and Exchange Commission and any stock exchange or similar authority; and
4. taking any other action of any type whatsoever in connection with the Solicitation, including entering into any settlement agreement, that in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

The undersigned hereby grants to such attorney-in-fact full power and authority to do and perform any and every act and thing whatsoever requisite, necessary, or proper to be done in the exercise of any of the rights and powers herein granted, as fully to all intents and purposes as the undersigned might or could do if personally present, with full power of substitution or revocation, hereby ratifying and confirming all that such attorney-in-fact, or such attorney-in-fact's substitutes, shall lawfully do or cause to be done by virtue of this Power of Attorney and the rights and powers herein granted. The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, is not assuming any of the undersigned's responsibilities to comply with Section 13(d), Section 16 or Section 14 of the Exchange Act.

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IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 9th day of February 2015.

/s/ John T. Kurtzweil

\_\_\_\_\_  
JOHN T. KURTZWEIL

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## POWER OF ATTORNEY

Know all by these presents, that the undersigned hereby constitutes and appoints Eric Singer, the undersigned's true and lawful attorney-in-fact to take any and all action in connection with (i) the undersigned's beneficial ownership of, or participation in a group with respect to, securities of Axcelis Technologies, Inc., a Delaware corporation (the "Company") directly or indirectly beneficially owned by Vertex Opportunities Fund, LP, a Delaware limited partnership, Vertex Special Opportunities Fund II, LP, a Delaware limited partnership, Vertex GP, LLC, a Delaware limited liability company, Vertex Special Opportunities GP II, LLC, a Delaware limited liability company, Vertex Capital Advisors, LLC, a Delaware limited liability company, and Eric Singer (collectively, the "Group") and (ii) any proxy solicitation of the Group to elect the Group's slate of director nominees to the board of directors of the Company at the 2015 annual meeting of stockholders of the Company (the "Solicitation"). Such action shall include, but not be limited to:

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4. taking any other action of any type whatsoever in connection with the Solicitation, including entering into any settlement agreement, that in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

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This Power of Attorney shall remain in full force and effect until the undersigned is no longer a member of the Group unless earlier revoked by the undersigned in a signed writing delivered to the foregoing attorneys-in-fact.

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 9th day of February 2015.

/s/ Peter J. Simone  
PETER J. SIMONE