

SCHEDULE 13G

Amendment No. 10
Axcelis Technologies Incorporated
Common Stock
Cusip #054540109

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Item 1: Reporting Person - FMR LLC
Item 4: Delaware
Item 5: 2,200,000
Item 6: 0
Item 7: 2,528,900
Item 8: 0
Item 9: 2,528,900
Item 11: 2.375%
Item 12: HC

Cusip #054540109
Item 1: Reporting Person - Edward C. Johnson 3d
Item 4: United States of America
Item 5: 0
Item 6: 0
Item 7: 2,528,900
Item 8: 0
Item 9: 2,528,900
Item 11: 2.375%
Item 12: IN

SCHEDULE 13G - TO BE INCLUDED IN
STATEMENTS
FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b)

Item 1(a). Name of Issuer:
Axcelis Technologies Incorporated

Item 1(b). Name of Issuer's Principal Executive Offices:
108 Cherry Hill Drive
Beverly, MA 01915

Item 2(a). Name of Person Filing:
FMR LLC

Item 2(b). Address or Principal Business Office or, if None,
Residence:
82 Devonshire Street, Boston,
Massachusetts 02109

Item 2(c). Citizenship:
Not applicable

Item 2(d). Title of Class of Securities:
Common Stock

Item 2(e). CUSIP Number:
054540109

Item 3. This statement is filed pursuant to Rule 13d-1(b) or 13d-2(b) and the person filing, FMR LLC, is a parent holding company in accordance with Section 240.13d-1(b)(ii)(G). (Note: See Item 7).

Item 4. Ownership

(a) Amount Beneficially Owned: 2,528,900

(b) Percent of Class: 2.375%

(c) Number of shares as to which such person has:

(i) sole power to vote or to direct the vote: 2,200,000

(ii) shared power to vote or to direct the vote: 0

(iii) sole power to dispose or to direct the disposition of: 2,528,900

(iv) shared power to dispose or to direct the disposition of: 0

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof, the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following (X).

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Not applicable

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company.

See attached Exhibit A.

Item 8. Identification and Classification of Members of the Group.

Not applicable. See attached Exhibit A.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certification.

Inasmuch as the reporting persons are no longer the beneficial owners of more than five percent of the number of shares outstanding, the reporting persons have no further reporting obligation under Section 13(d) of the Securities and Exchange Commission thereunder, and the reporting persons have no obligation to amend this Statement if any material change occurs in the facts set forth herein.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

February 13, 2012
Date

/s/ Scott C. Goebel
Signature

Scott C. Goebel
Duly authorized under Power of Attorney
effective as of June 1, 2008 by and on behalf of FMR LLC
and its direct and indirect subsidiaries

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FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b)

Pursuant to the instructions in Item 7 of Schedule 13G,

Fidelity Management & Research Company ("Fidelity"), 82 Devonshire Street, Boston, Massachusetts 02109, a wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 324,300 shares or 0.305% of the Common Stock outstanding of Axcelis Technologies Incorporated ("the Company") as a result of acting as investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940.

Edward C. Johnson 3d and FMR LLC, through its control of Fidelity, and the funds each has sole power to dispose of the 324,300 shares owned by the Funds.

Members of the family of Edward C. Johnson 3d, Chairman of FMR LLC, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC.

Neither FMR LLC nor Edward C. Johnson 3d, Chairman of FMR LLC, has the sole power to vote or direct the voting of the shares owned directly by the Fidelity Funds, which power resides with the Funds' Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Funds' Boards of Trustees.

Pyramis Global Advisors, LLC ("PGALLC"), 900 Salem Street, Smithfield, Rhode Island, 02917, an indirect wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 2,200,000 shares or 2.066% of the outstanding Common Stock of Axcelis Technologies Incorporated as a result of its serving as investment adviser to institutional accounts, non-U.S. mutual funds, or investment companies registered under Section 8 of the Investment Company Act of 1940 owning such shares.

Edward C. Johnson 3d and FMR LLC, through its control of PGALLC, each has sole dispositive power over 2,200,000 shares and sole power to vote or to direct the voting of 2,200,000 shares of Common Stock owned by the institutional accounts or funds advised by PGALLC as reported above.

Pyramis Global Advisors Trust Company ("PGATC"), 900 Salem Street, Smithfield, Rhode Island, 02917, an indirect wholly-owned subsidiary of FMR LLC and a bank as defined in Section 3(a)(6) of the Securities Exchange Act of 1934, is the beneficial owner of 4,600 shares or 0.004% of the outstanding Common Stock of the Axcelis Technologies Incorporated as a result of its serving as investment manager of institutional accounts owning such shares.

Edward C. Johnson 3d and FMR LLC, through its control of Pyramis Global Advisors Trust Company, each has sole dispositive power over 4,600 shares and sole power to vote or to direct the voting of 0 shares of Common Stock owned by the institutional accounts managed by PGATC as reported above.

SCHEDULE 13G - TO BE INCLUDED IN STATEMENTS

FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b)
RULE 13d-1(f)(1) AGREEMENT

The undersigned persons, on February 13, 2012, agree and consent to the joint filing on their behalf of this Schedule 13G in connection with their beneficial ownership of the Common Stock of Axcelis Technologies Incorporated at December 31, 2011.

FMR LLC

By /s/ Scott C. Goebel
Scott C. Goebel

Duly authorized under Power of Attorney effective as
of June 1, 2008, by and on behalf of FMR LLC and its direct
and indirect subsidiaries

Edward C. Johnson 3d

By /s/ Scott C. Goebel
Scott C. Goebel

Duly authorized under Power of Attorney effective as
of June 1, 2008, by and on behalf of Edward C. Johnson 3d

Fidelity Management & Research Company

By /s/ Scott C. Goebel
Scott C. Goebel

Senior V.P. and General Counsel