

AXCELIS TECHNOLOGIES INC

Form SC 13G

February 11, 2009

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

SCHEDULE 13G  
Under the Securities Exchange Act of 1934  
(Amendment No. \_\_\_\_\_)\*

Axcelis Technologies, Inc.  
(Name of Issuer)

Common  
(Title of Class of Securities)

054540109  
(CUSIP Number)

December 31, 2008  
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to  
which this Schedule is filed:

☒ Rule 13d-1(b)  
☐ Rule 13d-1(c)  
☐ Rule 13d-1(d)

\*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 the  
disclosures provided in a prior cover page.

The information required in 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).

CUSIP No. 054540109

1. Names of Reporting Persons.  
I.R.S. Identification Nos. of above persons (entities  
only).

Donald Smith & Co., Inc.  
13-2807845

2. Check the Appropriate Box if a Member of a Group (See  
Instructions)

(a)  
(b) ☒

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3. SEC Use Only  
.....

4. Citizenship or Place of Organization  
A Delaware Corporation

|                                                                   |                             |                   |
|-------------------------------------------------------------------|-----------------------------|-------------------|
| Number of Shares Beneficially Owned by Each Reporting Person With | 5. Sole Voting Power        | 8,272,300 shares  |
|                                                                   | 6. Shared Voting Power      | 0                 |
|                                                                   | 7. Sole Dispositive Power   | 10,303,300 shares |
|                                                                   | 8. Shared Dispositive Power | 0                 |

9. Aggregate Amount Beneficially Owned by Each Reporting Person  
10,303,300 shares

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9) 10.00%

12. Type of Reporting Person (See Instructions) IA

Item 1.

- (a) Name of Issuer: Axcelis Technologies, Inc.
- (b) Address of Issuer's Principal Executive Offices  
108 Cherry Hill Drive  
Beverly, MA 01915

Item 2.

- (a) Name of Person Filing: Donald Smith & Co., Inc.
- (b) Address of Principal Business Office:  
152 West 57th Street  
New York, NY 10019
- (c) Citizenship: A Delaware Corporation
- (d) Title of Class of Securities: Common
- (e) CUSIP Number: 054540109

Item 3. This statement is filed pursuant to Section 240.13d-1(b), and the person filing is an investment advisor registered in accordance with Section 240.13d-1(b)(1)(ii)(E);

Item 4. Ownership.

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

- (a) Amount beneficially owned: SEE ITEM 9 OF COVER PAGE

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- (b) Percent of class: SEE ITEM 11 OF COVER PAGE
- (c) Number of shares as to which the person has:
- (i) SOLE POWER TO VOTE: SEE ITEM 5 OF COVER PAGE
- (ii) SHARED POWER TO VOTE: SEE ITEM 6 OF COVER PAGE
- (iii) SOLE POWER TO DISPOSE: SEE ITEM 7 OF COVER PAGE
- (iv) SHARED POWER TO DISPOSE: SEE ITEM 8 OF COVER PAGE

Item 5. Ownership of Five Percent or Less is NOT APPLICABLE

Item 6. Ownership of More than Five Percent on Behalf of Another Person:  
All securities reported in this schedule are owned by  
advisory clients of Donald Smith & Co., Inc., no one of  
which, to the knowledge of Donald Smith & Co., Inc. owns  
more than 5% of the class.

Item 7. Identification and Classification of the Subsidiary Which Acquired  
the Security Being Reported on By the Parent Holding Company  
NOT APPLICABLE

Item 8. Identification and Classification of Members of the Group  
NOT APPLICABLE

Item 9. Notice of Dissolution of Group  
NOT APPLICABLE

Item 10. Certification

(a)

By signing below I certify that, to the best of my knowledge and  
belief, the securities referred to above were acquired and are held  
in the ordinary course of business and were not acquired and are not  
held for the purpose of or with the effect of changing or  
influencing the control of the issuer of the securities and were not  
acquired and are not held in connection with or as a participant in  
any transaction having that purpose or effect.

### 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 12, 2009  
Date

Donald G. Smith\_\_\_\_\_  
Signature

President\_\_\_\_\_  
Title