

Securities and Exchange Commission, Washington, D.C. 20549

Schedule 13D

Under the Securities Exchange Act of 1934

Axcelis Technologies Inc.

(Name of Issuer)

Common Stock (\$.001 par value)

(Title of Class of Securities)

054540109

(CUSIP Number)

Kenneth R. Cotner

Sterling Capital Management LLC

4064 Colony Road, Suite 300

Charlotte, NC 28211

704-372-8670

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

November 28, 2007

(Date of Event Which Requires Filing of This Statement) (Title of Class of Securities)

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. X

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7 for other parties to whom copies are to be sent.

*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).

CUSIP No. 054540109

(1) Names of reporting persons.

Sterling Capital Management

42-1658828

(2) Check the appropriate box if a member of a group

(a)

(b)

(3) SEC use only

(4) Source of funds (see instructions)

00. Funds of investment advisory clients.

(5) Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e).

Not applicable.

(6) Citizenship or place of organization

North Carolina

Number of shares beneficially owned by each reporting person with:

(7) Sole voting power

12,213,875 shares

(8) Shared voting power

None

(9) Sole dispositive power

12,213,875 shares

(10) Shared dispositive power

None

(11) Aggregate amount beneficially owned by each reporting person

12,213,875 shares

(12) Check if the aggregate amount in Row (11) excludes certain shares (see instructions).

Not applicable

(13) Percent of class represented by amount in Row (11)
11.9%

(14) Type of reporting person (see instructions)
IA

Item 1. Security and Issuer.

This Schedule 13D relates to the common stock, \$.001 par value (the "Securities"), of Axcelis Technologies Inc. (the "Issuer"). The principal executive office of the Issuer is located at 108 Cherry Hill Drive; Beverly, MA 01915.

Item 2. Identity and Background.

(a), (b), (c) and (f). This statement is being filed by Sterling Capital Management LLC ("Sterling").

Sterling is an investment adviser registered with the Securities & Exchange Commission under the Investment Advisers Act of 1940. The address of its principal office is 4064 Colony Road, Suite 300, Charlotte, NC 28211. Sterling serves as an investment adviser to individual and institutional clients. The Securities of the Issuer reported in Item 5 were acquired on behalf of the investment advisory clients of Sterling, under discretionary authority granted to Sterling.

(d) and (e). None of the entities or persons identified in this Item 2 has during the past five years been convicted in any criminal proceeding, nor been a 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.

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

The respective investment advisory clients of Sterling used approximately \$72,081,242 in the aggregate to purchase the Securities reported in this filing. All assets used to purchase Securities were assets of these respective clients and none were assets of Sterling. In addition, none of the proceeds used to purchase the Securities were provided through borrowings of any nature.

Item 4. Purpose of Transaction.

On November 15, 2007, representatives of Sterling Capital met with senior management of the Issuer. At this meeting several issues were discussed including the progress of the Optima HD, the company's strategy to maintain High Energy market share, cost reduction initiatives, recent personnel changes, and financial initiatives designed to enhance operating flexibility. Subsequent to this meeting, Sterling sent a letter to Ms. Mary Puma, Chairman and Chief Executive Officer of Axcelis. This letter encouraged management and the board of directors to move forward on several actions designed to enhance shareholder value. We have attached a copy of this most recent correspondence.

The Securities reported in this filing have been acquired for investment purposes on behalf of client accounts over which Sterling has discretionary investment authority.

In pursuing such investment purposes, Sterling may further purchase, hold, vote, trade, dispose or otherwise deal in the Securities at times, and in such manner, as they deem advisable to benefit from changes in market prices of such Securities, changes in the Issuer's operations, business strategy or prospects, or from sale or merger of the Issuer. To evaluate such alternatives, Sterling will routinely monitor the Issuer's operations, prospects, business development, management, competitive and strategic matters, capital structure, and prevailing market conditions, as well as alternative investment opportunities and other investment considerations. Consistent with its investment research methods and evaluation criteria, Sterling may discuss such matters with management or directors of the Issuer, other shareholders, industry analysts, existing or potential strategic partners or competitors, investment and financing professionals, sources of credit and other investors. Such factors and discussions may materially affect, and result in, Sterling modifying its clients' ownership of the Securities, exchanging information with the Issuer pursuant to appropriate confidentiality or similar agreements, proposing changes in the Issuer's operations, governance or capitalization, or in proposing one or more of the other actions described in subsections (a) through (j) of Item 4 of Schedule 13D.

Sterling reserves the right to formulate other plans and/or make other proposals, and take such actions with respect to their investment in the Issuer, including any or all of the actions set forth in paragraphs (a) through (j) of Item 4 of Schedule 13D.

Item 5. Interest in Securities of the Issuer.

(a) and (b). The aggregate number and percentage of Securities to which this Schedule 13D relates is 12,213,875 shares of the common stock of the Issuer, constituting approximately 11.9% of the 102,250,365 shares outstanding.

(c). The following transactions in the Issuer's Securities were effected by Sterling during the sixty days preceding the date of this report. On certain days, multiple transactions may have been executed at different times. The data below include the total shares and average price for all buy or sell transactions effected for each day. All such transactions represent open market transactions.

Transaction	Trade Date	Shares	Average Price
Buy	10/3/2007	61,400	\$5.01
Buy	10/4/2007	100,000	\$4.92
Buy	10/5/2007	97,944	\$5.02
Buy	10/8/2007	2,050	\$4.94
Buy	10/9/2007	15,608	\$4.98
Buy	10/10/2007	95,359	\$5.01
Buy	10/11/2007	170,000	\$4.99
Buy	10/12/2007	112,000	\$5.01
Buy	10/15/2007	82,200	\$5.03
Buy	10/16/2007	53,900	\$5.02
Buy	10/17/2007	177,260	\$4.78
Buy	10/18/2007	273,950	\$4.91
Buy	10/19/2007	429,930	\$4.86
Buy	10/22/2007	61,100	\$4.88
Buy	10/23/2007	3,800	\$5.00
Buy	10/24/2007	72,200	\$4.65
Buy	11/7/2007	20,000	\$4.09
Buy	11/8/2007	113,500	\$4.08
Buy	11/15/2007	61,648	\$4.34
Buy	11/16/2007	21,590	\$4.39
Sell	9/26/2007	4,500	\$5.07
Sell	10/1/2007	50,000	\$5.13
Sell	10/2/2007	95,950	\$5.11
Sell	10/3/2007	126,941	\$4.98
Sell	10/4/2007	123,650	\$4.87
Sell	10/23/2007	9,200	\$4.74
Sell	10/25/2007	3,900	\$4.46
Sell	10/26/2007	350	\$4.34
Sell	11/13/2007	5,000	\$4.33
Sell	11/15/2007	4,800	\$4.33
Sell	11/21/2007	740	\$4.29

(d). The investment advisory clients of Sterling have the sole right to receive and, subject to notice, to withdraw the proceeds from the sale of the Securities. Such clients may also terminate the investment advisory agreements without penalty upon appropriate notice.

(e). Not applicable.

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

The powers of disposition with respect to Securities owned by discretionary accounts of Sterling are established in written investment advisory agreements between clients and Sterling, which are entered into in the normal and usual course of the business of Sterling as a registered investment adviser and which are generally applicable to all securities purchased for the benefit of each such discretionary account. There are no special or different agreements relating to the Securities of the Issuer.

The written investment advisory agreements with clients do not contain provisions relating to borrowing of funds to finance the acquisition of the Securities, acquisition of control, transfer of securities, joint ventures, or any of the other transactions listed in the instructions to Item 7 of Schedule 13D other than voting of proxies. In connection with voting, Sterling may be allowed or directed to vote the proxies received by discretionary accounts.

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.

Date: November 28, 2007

STERLING CAPITAL MANAGEMENT LLC

By /s/ Brian R. Walton

Brian R. Walton
Managing Director

November 19, 2007

Ms Mary Puma
Chairman and Chief Executive Officer
Axcelis Technologies
108 Cherry Hill Drive
Beverly, MA 01915

Dear Mary:

We appreciated the opportunity to meet with you and Stephen Bassett last Wednesday. In our opinion, the meeting was productive in framing the potential for the Optima HD product as well as the high degree of conviction in its ultimate success shared by senior management and the Board.

We do believe that certain actions are required today to ensure that Axcelis has the financial flexibility to drive Optima to its full potential. We are of the opinion that there is a growing risk that external forces will exert pressure on Axcelis over the next 12 to 18 months. Specifically, a weakening semiconductor capital equipment market and aggressive marketing tactics by a well funded competitor may work to create a challenging 2008. To address these likely near term challenges we strongly encourage that you expeditiously move forward on the following objectives:

- * Refinance the existing 2009 Convertible Notes
- * Explore a sale-leaseback agreement for the Beverly property

Successful completion of the above initiatives should secure Axcelis' financial strength even under the most challenging of environments. Further, it should eliminate the growing concern among Wall Street analysts about Axcelis' financial flexibility.

Coincident with actions designed to strengthen the balance sheet, we also believe that the Board needs to begin the process to explore strategic alternatives for Axcelis. Hiring an investment banking firm to solicit interest for a minority, majority, or strategic investment in Axcelis is an obvious path to creating shareholder value. We believe an educated buyer would be willing to value Axcelis incorporating the company's Optima technology and market potential. Further, we believe an investor would be attracted to Axcelis' large installed base and stable service business, dominant market position in the High Energy segment, and ownership position in SEN.

Ms. Mary Puma
November 19, 2007
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Sterling currently owns approximately 12 million shares of Axcelis or 11% of the outstanding shares. It is our intention to convert to a 13D ownership position which will allow us greater flexibility in communicating with other interested parties.

We hope management and the Board will support these initiatives and will move aggressively to create value for Axcelis' shareholders.

Sincerely,

STERLING CAPITAL MANAGEMENT LLC

Brian R. Walton, CFA

cc: Mr. Stephen R. Hardis
Mr. Steve Bassett