

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

FORM 8-K

**CURRENT REPORT PURSUANT
TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934**

Date of Report (Date of Earliest Event Reported): **September 15, 2008**

Axcelis Technologies, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware

(State or other jurisdiction of incorporation)

000-30941

(Commission File Number)

34-1818596

(IRS Employer Identification No.)

108 Cherry Hill Drive

Beverly, Massachusetts

(Address of principal executive offices)

01915

(Zip Code)

Registrant's Telephone Number, Including Area Code: **(978) 787-4000**

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 7.01. Regulation FD Disclosure.

The Company hereby furnishes as Exhibit 99.1 to this Form 8-K a copy of a letter to Sumitomo Heavy Industries, Ltd. dated September 15, 2008. Exhibit 99.1 shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities under that Section and shall not be deemed to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Letter from Mary G. Puma, Chairman and Chief Executive Officer Axcelis Technologies, Inc. to Yoshinobu Nakamura, President and Chief Executive Officer of Sumitomo Heavy Industries, Ltd. dated September 15, 2008

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: September 15, 2008

Axcelis Technologies, Inc.

By: /s/ STEPHEN G. BASSETT
Stephen G. Bassett
Executive Vice President and Chief
Financial Officer



Mary G. Puma
Chairman and Chief Executive Officer

Tel: (978) 787-4226

Fax: (978) 787-4090

September 15, 2008

Mr. Yoshinobu Nakamura
 President and CEO
 Sumitomo Heavy Industries, Ltd.
 ThinkPark Tower
 1-1, Osaki 2-chome, Shinagawa-ku
 Tokyo 141-6025
 Japan

Dear Nakamura-san,

Axcelis would like to thank Kinoshita-san and the rest of the SHI team for coming to Boston to meet with us. We understand from the presentation we received from Kinoshita-san on September 4, 2008 that SHI has concluded that it will not be making an acquisition offer for Axcelis at this time.

We appreciate SHI's acknowledgement of the good faith cooperation that Axcelis showed in SHI's due diligence process. Once adequate confidentiality protection was in place, Axcelis promptly and thoroughly responded to SHI's diligence requests, involving significant Axcelis management time and resources. Given this, we were surprised that SHI was unable to make a definitive offer for Axcelis, especially in light of SHI's public solicitation of a transaction earlier this year.

As our acquisition discussions now appear to have come to an end, I wanted to recap the course of those discussions:

- After signing a confidentiality agreement in June, Axcelis management met SHI representatives and provided a significant amount of data in response to SHI's initial requests for due diligence. It was our expectation that, following this due diligence, SHI would make a revised proposal to acquire Axcelis. Such a proposal was not made and instead SHI requested additional information.
- In response, and in exchange for agreeing to further requests for additional information and more meetings in July, Axcelis asked SHI to

commit to a specific written schedule for submitting a revised acquisition proposal. SHI committed to provide a new proposal to Axcelis by August 1, 2008 and confirmed that the revised proposal would include an indication of value as well as a draft acquisition agreement. With that process confirmed and in place, Axcelis proceeded in good faith and promptly provided more information and made its management available for further extensive due diligence sessions.

- Despite its commitment, SHI did not submit a new proposal on August 1. Instead, SHI thanked Axcelis for its cooperation and openness in the diligence process, and requested seven more weeks of due diligence before deciding whether to make a new proposal. SHI further proposed that, if it made a new proposal after the additional seven weeks, there would be a further five-week period of "confirmatory" due diligence thereafter prior to SHI's decision on whether to proceed with an acquisition agreement.
- Given SHI's repeated failure to deliver a new proposal for the purchase of Axcelis, and with the increasing uncertainty as to whether SHI would ever make such a proposal, the Axcelis Board determined that the additional process requested by SHI in August was not in Axcelis' shareholders' best interests. Therefore, Axcelis informed SHI that it could not agree to the extended timeline, and gave SHI a final deadline to make a new proposal by the end of August. At this point, Axcelis also made an alternative proposal to SHI that SEN and Axcelis could become one company by SHI exchanging its SEN shares for Axcelis shares.
- On September 4, SHI informed Axcelis that SHI would not make a definitive acquisition proposal and was placing discussions regarding the acquisition of Axcelis "on hold."

The Axcelis Board's decision not to agree further extensions of the diligence process has been validated by SHI's stated reasons for ending the acquisition discussions. None of SHI's stated concerns, including the difficulty of SHI implementing a restructuring of Axcelis, market acceptance to date of the Optima products, and Axcelis' current financial performance, would have been resolved through further near term due diligence.

As Axcelis and SHI must continue to work together to optimize the performance of our joint venture, SEN, SHI should understand that SHI's decision to make a public approach to Axcelis shareholders has added substantially to Axcelis' challenges in 2008. SHI's campaign has negatively impacted our relationships with investors, customers and employees and, at the end, has benefited no one. As a long term partner, we hope that any future discussions with SHI can be held in private.

As you know, in light of our convertible debt due in January 2009, the Axcelis Board is currently evaluating several refinancing plans. In that context, we had suggested that SHI allow SEN to make a loan to Axcelis from its cash balance of \$120 million. Axcelis' share of SEN's cash has been trapped in Japan because SHI has declined to join Axcelis in approving dividends which appropriately reflect the amount by which SEN's cash generation over the last few

years has exceeded SEN's cash needs. Such a step could have allowed us to continue our discussions. Unfortunately, the proposal made by SHI on September 4th, 2008 offered a small loan from SEN which was conditioned upon SHI taking control of the JV. This control shift would establish SEN as a sanctioned competitor of Axcelis, and as such, is inconsistent with Axcelis' interest in becoming one company with SEN, which we believe is the best way to return the full value of our technology to our shareholders.

Our Board will continue to evaluate the situation and decide on a path that will best position Axcelis for future success. We will remain open minded to any proposal you may choose to make. Our hope is that such proposals, if any, will be designed to balance both sides' strategic interests in a constructive manner.

Best regards,

/s/ Mary G. Puma
