

**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 30, 2010**

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:

- 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 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

On September 30, 2010, Stephen G. Bassett, our Chief Financial Officer, announced his retirement effective March 31, 2011.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

99.1 Press Release of Axcelis Technologies Inc. dated September 30, 2010. Filed herewith.

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SIGNATURE

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 30, 2010

Axcelis Technologies, Inc.

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



AXCELIS CFO TO RETIRE

BEVERLY, Mass.—September 30, 2010—Axcelis Technologies, Inc. (Nasdaq: ACLS) today announced that Stephen Bassett, the company's Chief Financial Officer, will retire on March 31, 2011. The company has initiated a search for his successor.

Bassett joined Axcelis in 2003 as Executive Vice President and Chief Financial Officer. During his time with the company, he was instrumental in improving Axcelis' business model by significantly reducing expenses and rebuilding its balance sheet.

"Steve has been a valuable member of the Axcelis leadership team over the last seven years. He has been an asset not only in leading the financial function, but in his many contributions to improving the financial health of the business overall," noted Mary Puma, chairman and CEO.

"Axcelis is well positioned for future growth and profitability," said Bassett. "I am proud of the changes we have made to put the company in a much stronger position in the last several years. I look forward to working closely with the team until my retirement."

About Axcelis

Axcelis Technologies, Inc. (Nasdaq: ACLS) headquartered in Beverly, Massachusetts, provides innovative, high-productivity solutions for the semiconductor industry. Axcelis is dedicated to developing enabling process applications through the design, manufacture and complete life support of ion implantation and cleaning systems. The company's Internet address is: www.axcelis.com.

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