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

**POST-EFFECTIVE AMENDMENT NO. 1 TO
FORM S-3 REGISTRATION STATEMENT NO. 333-85214
Under the Securities Act of 1933**

AXCELIS TECHNOLOGIES, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other
jurisdiction of incorporation)

34-1818596
(IRS Employer
Identification No.)

**108 Cherry Hill Drive
Beverly, Massachusetts 01915
(978) 787-4000**
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

**Lynnette C. Fallon
Executive Vice President and General Counsel
Axcelis Technologies, Inc.
108 Cherry Hill Drive
Beverly, Massachusetts 01915
(978) 787-4000**
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

DEREGISTRATION OF UNSOLD SECURITIES

This post-effective amendment relates to Registration Statement No. 333-85214 on Form S-3 (the "Registration Statement") of Axcelis Technologies, Inc. (the "Company"), registering 6,250,000 shares of common stock, par value \$0.001 per share of the Company, which was filed with the Securities and Exchange Commission on March 29, 2002.

The offering pursuant to the Registration Statement has been terminated. In accordance with the undertaking made by the Company in the Registration Statement to remove from registration, by means of a post-effective amendment, any of the securities that remain unsold at the termination of the offering, the Company hereby removes from registration the securities of the Company registered but unsold under the Registration Statement.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933 and Rule 478 thereunder, Axcelis Technologies, Inc. has duly caused this post-effective amendment to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Beverly, Commonwealth of Massachusetts, on July 5, 2007.

AXCELIS TECHNOLOGIES, INC.

By: /s/ Mary G. Puma
Name: Mary G. Puma
Title: Chairman of the Board, President and Chief Executive
Officer
(Duly authorized officer)