

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

April 6, 2009

## Via Fax (978) 787-4090 and U.S. Mail

Ms. Lynette Fallon Axcelis Technologies, Inc. Secretary and General Counsel 108 Cherry Hill Drive Beverly, MA 01915

Re: Axcelis Technologies, Inc.

**Preliminary Proxy Statement on Schedule 14A** 

Filed February 20, 2009 File No. 000-30941

Dear Ms. Fallon:

We have completed our limited review of your Preliminary Proxy Statement and have no further comments at this time. If you have any questions, please contact Geoffrey D. Kruczek at (202) 551-3641.

Sincerely,

Russell Mancuso Branch Chief