

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

**FORM 144**

**NOTICE OF PROPOSED SALE OF SECURITIES  
PURSUANT TO RULE 144 UNDER THE SECURITIES ACT OF 1933**

OMB APPROVAL

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SEC USE ONLY

DOCUMENT SEQUENCE NO.

CUSIP NUMBER

**ATTENTION:** *Transmit for filing 3 copies of this form concurrently with either placing an order with a broker to execute sale or executing a sale directly with a market maker*

<b>1 (a) NAME OF ISSUER</b> <b>AXCELIS TECHNOLOGIES, INC.</b>			<b>(b) IRS IDENT. NO.</b> <b>34-1818596</b>		<b>(c) S.E.C. FILE NO.</b> <b>000-30941</b>		<b>WORK LOCATION</b>		
<b>1 (d) ADDRESS OF ISSUER</b> <b>108 Cherry Hill Drive</b>			<b>STREET</b>	<b>CITY</b> <b>Beverly</b>	<b>STATE</b> <b>MA</b>	<b>ZIP CODE</b> <b>01915</b>		<b>(e) TELEPHONE NO.</b> <div style="display: flex; justify-content: space-between;"> <span><b>978</b></span> <span><b>787-4000</b></span> </div>	
<b>2 (a) NAME OF PERSON FOR WHOSE ACCOUNT THE SECURITIES ARE TO BE SOLD</b> <b>MARY PUMA</b>			<b>(b) RELATIONSHIP TO ISSUER</b> <b>AFFILIATE</b>		<b>(c) ADDRESS</b> <b>Axcelis Technologies, Inc.</b> <b>108 Cherry Hill Drive, Beverly, MA 01915</b>				
					<b>STREET</b>	<b>CITY</b>	<b>STATE</b>	<b>ZIP CODE</b>	

***INSTRUCTION:** The person filing this notice should contact the issuer to obtain the IRS Identification Number and the SEC File Number.*

3 (a) Title of the Class of Securities To Be Sold	(b) Name and Address of Each Broker Through Whom the Securities are to be Offered or Each Market Maker who is Acquiring the Securities	SEC USE ONLY	(c) Number of Shares or Other Units To Be Sold	(d) Aggregate Market Value	(e) Number of Shares or Other Units Outstanding	(f) Approximate Date of Sale	(g) Name of Each Securities Exchange
		Broker-Dealer File Number	(See instr. 3(c))	(See instr. 3(d))	(See Instr. 3(e))	(See instr. 3(f)) (MO. DAY YR.)	(See instr. 3(g))
Common	Morgan Stanley Smith Barney LLC 1 New York Plaza, 38th Floor New York, NY 10004		75,000	2,954,473	33,730,000	March 11, 2021	NASDAQ

**INSTRUCTIONS:**

1. (a) Name of issuer  
(b) Issuer's I.R.S. Identification Number  
(c) Issuer's S.E.C. file number, if any  
(d) Issuer's address, including zip code  
(e) Issuer's telephone number, including area code
2. (a) Name of person for whose account the securities are to be sold  
(b) Such person's relationship to the issuer (e.g., officer, director, 10% stockholder or member of immediate family of any of the foregoing)  
(c) Such person's address, including zip code
3. (a) Title of the class of securities to be sold  
(b) Name and address of each broker through whom the securities are intended to be sold  
(c) Number of shares or other units to be sold (if debt securities, give the aggregate face amount)  
(d) Aggregate market value of the securities to be sold as of a specified date within 10 days prior to the filing of this notice  
(e) Number of shares or other units of the class outstanding, or if debt securities the face amount thereof outstanding, as shown by the most recent report or statement published by the issuer  
(f) Approximate date on which the securities are to be sold  
(g) Name of each securities exchange, if any, on which the securities are intended to be sold

**Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.**

### TABLE I — SECURITIES TO BE SOLD

Furnish the following information with respect to the acquisition of the securities to be sold and with respect to the payment of all or any part of the purchase price or other consideration therefor:

Title of the Class	Date you Acquired	Nature of Acquisition Transaction	Name of Person from Whom Acquired (If gift, also give date donor acquired)	Amount of Securities Acquired	Date of Payment	Nature of Payment
COMMON	MAR. 11, 2021	EXERCISE OF STOCK OPTIONS	ISSUER	75,000	MAR. 11, 2021	CASH

**INSTRUCTIONS:** If the securities were purchased and full payment therefor was not made in cash at the time of purchase, explain in the table or in a note thereto the nature of the consideration given. If the consideration consisted of any note or other obligation, or if payment was made in installments describe the arrangement and state when the note or other obligation was discharged in full or the last installment paid.

### TABLE II — SECURITIES SOLD DURING THE PAST 3 MONTHS

Furnish the following information as to all securities of the issuer sold during the past 3 months by the person for whose account the securities are to be sold.

Name and Address of Seller	Title of Securities Sold	Date of Sale	Amount of Securities Sold	Gross Proceeds
NONE				

**REMARKS:**

#### INSTRUCTIONS:

See the definition of "person" in paragraph (a) of Rule 144. Information is to be given not only as to the person for whose account the securities are to be sold but also as to all other persons included in that definition. In addition, information shall be given as to sales by all persons whose sales are required by paragraph (e) of Rule 144 to be aggregated with sales for the account of the person filing this notice.

**ATTENTION:** The person for whose account the securities to which this notice relates are to be sold hereby represents by signing this notice that he does not know any material adverse information in regard to the current and prospective operations of the Issuer of the securities to be sold which has not been publicly disclosed. If such person has adopted a written trading plan or given trading instructions to satisfy Rule 10b5-1 under the Exchange Act, by signing the form and indicating the date that the plan was adopted or the instruction given, that person makes such representation as of the plan adoption or instruction date.

MARCH 11, 2021  
N/A DATE OF NOTICE  
DATE OF PLAN ADOPTION OR GIVING OF INSTRUCTION,  
IF RELYING ON RULE 10b5-1

MARY G. PUMA  
(SIGNATURE)

The notice shall be signed by the person for whose account the securities are to be sold. At least one copy of the notice shall be manually signed. Any copies not manually signed shall bear typed or printed signatures.

**ATTENTION: Intentional misstatements or omission of facts constitute Federal Criminal Violations (See 18 U.S.C. 1001)**