

FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

| OMB APPROVAL | |
|----------------------------------------------|-----------|
| OMB Number: | 3235-0287 |
| Estimated average burden hours per response: | 0.5 |

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Name and Address of Reporting Person* <u>KEITHLEY JOSEPH P</u> (Last) (First) (Middle) <u>C/O AXCELIS TECHNOLOGIES, INC.</u> <u>108 CHERRY HILL DRIVE</u> (Street) <u>BEVERLY MA 01915</u> (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol <u>AXCELIS TECHNOLOGIES INC [ACLS]</u> | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below) |
| | 3. Date of Earliest Transaction (Month/Day/Year) <u>05/15/2023</u> | |
| | 4. If Amendment, Date of Original Filed (Month/Day/Year) | |

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) | | | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|----------------------------------------------------|--------------------------------|---|-------------------------------------------------------------------|------------|-------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------|
| | | | Code | V | Amount | (A) or (D) | Price | | | |
| Common Stock | 05/15/2023 | | S | | 2,000 | D | \$125.19 ⁽¹⁾ | 11,375 ⁽²⁾ | D | |
| Common Stock | 05/15/2023 | | S | | 1,000 | D | \$127.84 ⁽³⁾ | 10,375 ⁽²⁾ | D | |
| Common Stock | 05/15/2023 | | A | | 1,282 | A | \$0.00 ⁽⁴⁾ | 11,657 ⁽⁵⁾ | D | |

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | | 6. Date Exercisable and Expiration Date (Month/Day/Year) | | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--------------------------------------------|--------------------------------------------------------|--------------------------------------|----------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------|-----|----------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------|
| | | | | | (A) | (D) | Date Exercisable | Expiration Date | | | | | |

Explanation of Responses:

- The price reported in Column 4 is a weighted-average price. These shares were sold in multiple transactions at prices ranging from \$125.01 to \$125.23, inclusive. The reporting person undertakes to provide to Axcelis Technologies, Inc., any security holder of Axcelis Technologies, Inc., or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares sold at each separate price.
- Of the shares held after this sale on May 15, 2023, 2,689 were issuable on vesting of restricted stock units granted to the executive under the 2012 Equity Incentive Plan and are subject to forfeiture.
- The price reported in Column 4 is a weighted-average price. These shares were sold in multiple transactions at prices ranging from \$127.71 to \$127.91, inclusive. The reporting person undertakes to provide to Axcelis Technologies, Inc., any security holder of Axcelis Technologies, Inc., or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares sold at each separate price.
- These shares are issuable on vesting of restricted stock units granted under the Company's 2012 Equity Incentive Plan. Assuming continuation of service on the Board of Directors, these restricted stock units will vest on May 15, 2024.
- Of the shares held after this grant on of May 15, 2023, 3,971 shares were issuable on vesting of restricted stock units granted to the director under the 2012 Equity Incentive Plan and are subject to forfeiture.

Remarks:

Lynnette C. Fallon, as
attorney in fact for Joseph P. Keithley 05/15/2023

** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.