UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

POST-EFFECTIVE
AMENDMENT NO. 1
TO
FORM S-1 ON FORM S-3
REGISTRATION STATEMENT

UNDER
THE SECURITIES ACT OF 1933

Amprius Technologies, Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization) 98-1591811 (I.R.S. Employer Identification Number)

1180 Page Avenue Fremont, California 94538 (800) 425-8803 (Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Dr. Kang Sun
1180 Page Avenue
Fremont, California 94538
(800) 425-8803
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Michael J. Danaher Mark B. Baudler Austin D. March Wilson Sonsini Goodrich & Rosati, Professional Corporation 650 Page Mill Road Palo Alto, CA 94304 (650) 493-9300

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of the registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. \Box

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. \Box

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. \Box

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. \Box

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

 Large accelerated filer
 □

 Non-accelerated filer
 Smaller reporting company

 Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of Securities Act. \Box

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

On April 5, 2023, Amprius Technologies, Inc., a Delaware corporation ("Amprius," the "Company," "we," "us" or "our"), filed a registration statement with the Securities and Exchange Commission (the "SEC") on Form S-1 (File No. 333-271149) (the "Initial Registration Statement"). The Initial Registration Statement was declared effective by the SEC on April 12, 2023. This post-effective amendment to Form S-1 on Form S-3 is being filed to convert the Initial Registration Statement into a registration statement on Form S-3.

No additional securities are being registered under this post-effective amendment and all applicable registration and filing fees were paid at the time of the filing of the Initial Registration Statement.

The information in this prospectus is not complete and may be changed. The securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, dated October 2, 2023

PROSPECTUS

22,733,236 Shares of Common Stock



Amprius Technologies, Inc.

This prospectus relates to the offer by us of up to 22,733,236 shares of common stock, par value \$0.0001 per share (the "Common Stock"), of Amprius Technologies, Inc. (the "Company") issuable upon the exercise of an aggregate of 22,733,236 warrants (the "Associated Warrants"), each of which is exercisable at a price of \$11.50 per share, issued as part of units in the Company's initial public offering (such warrants issued in the initial public offering collectively, the "Public Warrants").

We will receive proceeds from the exercise of the Associated Warrants if the Associated Warrants are exercised for cash. However, the exercise price of the Associated Warrants is \$11.50 per share, which exceeds \$4.74, the closing price of our Common Stock on the New York Stock Exchange (the "NYSE") on September 29, 2023. The likelihood that warrant holders will exercise the Associated Warrants and any cash proceeds that we would receive is dependent upon the market price of our Common Stock. If the market price for our Common Stock is less than \$11.50 per share, we believe warrant holders will be unlikely to exercise their Associated Warrants. For more information, see the section titled "Use of Proceeds" appearing elsewhere in this prospectus.

Our Common Stock is listed on the NYSE under the symbol "AMPX," and our Public Warrants are listed on the NYSE under the symbol "AMPX.W." On September 29, 2023, the last quoted sale price for our Common Stock as reported on the NYSE was \$4.74 per share and the last quoted sale price for our Public Warrants as reported on the NYSE was \$0.30 per warrant.

We are an "emerging growth company" and a "smaller reporting company" as defined under the federal securities laws, and, as such, may elect to comply with certain reduced public company reporting requirements for this and future filings. We will provide information in any applicable prospectus supplement regarding any listing of securities other than shares of our common stock on any securities exchange.

Investing in our securities involves risks. Please carefully read the information under the headings "Risk Factors" beginning on page 4 of this prospectus and "Item 1A—Risk Factors" of our most recent Annual Report on Form 10-K and our subsequently filed Quarterly Reports on 10-Q that are incorporated by reference in this prospectus before you invest in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2023.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the "SEC") using a "shelf" registration process. This prospectus relates to the issuance by us of shares of Common Stock issuable upon the exercise of the Associated Warrants.

We have not authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus or any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We do not take any responsibility for, or provide any assurance as to the reliability of, any other information that others may give you. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted.

We may also provide a prospectus supplement or post-effective amendment to the registration statement to add information to, or update or change information contained in, this prospectus. You should read both this prospectus and any applicable prospectus supplement or post-effective amendment to the registration statement together with the additional information to which we refer you in the sections of this prospectus titled "Where You Can Find Additional Information" and "Incorporation by Reference."

PROSPECTUS SUMMARY

This summary highlights selected information that is presented in greater detail elsewhere, or incorporated by reference, in this prospectus. It does not contain all of the information that may be important to you and your investment decision. Before investing in our securities, you should carefully read this entire prospectus, including the matters set forth in the section titled "Risk Factors" and the financial statements and related notes and other information that we incorporate by reference herein, including our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q. Unless the context indicates otherwise, references in this prospectus to "Amprius," "we," "our" and "us" refer, collectively, to Amprius Technologies, Inc., a Delaware corporation, and its subsidiaries taken as a whole.

Company Overview

Amprius has developed and, since 2018, been in commercial production of an ultra-high energy density lithium-ion battery for mobility applications leveraging disruptive silicon anodes. Our silicon anode technology enables batteries with higher energy density, higher power density, and extreme fast charging capabilities over a wide range of operating temperatures, which results in our batteries providing superior performance compared to conventional graphite lithium-ion batteries. Our silicon anodes are a direct drop-in replacement of the graphite anode in traditional lithium-ion batteries, and our manufacturing process leverages the manufacturing process for conventional lithium-ion batteries and the related supply chain.

Today, our batteries are primarily used for existing and emerging aviation applications, including unmanned aerial systems, such as drones and high-altitude pseudo satellites. We believe our proprietary technology has the potential for broad application in electric transportation.

Our batteries and their performance specifications have been tested and validated for application by over 40 customers, including Airbus, AeroVironment, BAE Systems, the U.S. Army and Teledyne FLIR, and we have shipped over 10,000 batteries to date, which have enabled mission critical applications. Our proprietary silicon anode structures, battery cell designs and manufacturing processes are defended by our portfolio of patents, trade secrets and know-how developed over 10 years of research and development.

We currently manufacture batteries on a kWh-scale manufacturing line at our headquarters in Fremont, California, where we believe demand for our batteries exceeds our manufacturing capacity. We are working to meet the expected demand in several rapidly growing addressable markets, including by designing and building a large-scale manufacturing facility that can produce batteries at GWh+ scale.

Corporate Information

Our principal executive offices are located at 1180 Page Avenue, Fremont, California 94538, and our telephone number is (800) 425-8803. Our website is www.amprius.com. We make available free of charge through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the SEC. These reports and other information are also available, free of charge, at www.sec.gov. Information contained on, or that can be accessed through, the websites referenced in this prospectus are not a part of, and are not incorporated into, this prospectus.

THE OFFERING

Shares of our Common Stock outstanding prior to

exercise of the Associated Warrants

86,440,500 shares

Shares of our Common Stock that may be issued upon 22,733,236 shares exercise of the Associated Warrants

Shares of our Common Stock outstanding after the exercise of the Associated Warrants

109,173,736 shares

Use of Proceeds

We will receive up to an aggregate of approximately \$261.4 million, assuming the exercise in full of all of the Associated Warrants for cash. However, the exercise price of the Associated Warrants is \$11.50 per share, which exceeds \$4.74, the closing price of our Common Stock on the NYSE on September 29, 2023. The likelihood that warrant holders will exercise the Associated Warrants and any cash proceeds that we would receive is dependent upon the market price of our Common Stock. If the market price for our Common Stock is less than \$11.50 per share, we believe warrant holders will be unlikely to exercise their Associated Warrants. We expect to use any net proceeds from the exercise of the Associated Warrants for general corporate purposes. See the section titled "Use of

Proceeds" for more information.

Risk Factors

See the section titled "Risk Factors" and other information included in this prospectus for a discussion of factors that you should consider carefully before deciding to invest in our

Common Stock.

NYSE Symbol

"AMPX"

The number of shares of Common Stock outstanding is as of September 15, 2023 and excludes the following:

- 13,582,871 shares of our Common Stock issuable upon the exercise of outstanding options under the Amprius Technologies, Inc. 2016 Equity Incentive Plan, with a weighted average exercise price of \$1.36 per share;
- 16,400,000 shares of our Common Stock issuable upon the exercise of Private Warrants, with an exercise price of \$11.50 per share;
- 29,268,236 shares of our Common Stock issuable upon the exercise of Public Warrants, with an exercise price of \$11.50 per share;
- 2,052,500 shares of our Common Stock issuable upon the exercise of PIPE Warrants, with an exercise price of \$12.50 per share;
- 13,654,841 shares of our Common Stock reserved for future issuance under the Amprius Technologies, Inc. 2022 Equity Incentive Plan (the "2022 Plan");

- 568,708 shares of our Common Stock issuable upon the vesting of outstanding restricted stock units granted under the 2022 Plan; and
- 1,836,101 shares of our Common Stock reserved for future issuance under the Amprius Technologies, Inc. 2022 Employee Stock Purchase Plan.

RISK FACTORS

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of our securities will contain a discussion of the risks applicable to an investment in our securities. Prior to making a decision about investing in our securities, you should carefully consider the specific risk factors discussed under "Part I—Item 1A—Risk Factors" of our most recent Annual Report on Form 10-K and in "Part II—Item 1A—Risk Factors" in our most recent Quarterly Report on Form 10-Q filed subsequent to such Form 10-K that are incorporated herein by reference, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus, as may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain certain statements that constitute "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Exchange Act. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "could," "would," "project," "plan," "potentially," "likely," and similar expressions and variations thereof are intended to identify forward-looking statements, but are not the exclusive means of identifying such statements. Those statements appear in this prospectus, any accompanying prospectus supplement and the documents incorporated herein and therein by reference, particularly in the sections titled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and include statements regarding the intent, belief or current expectations of our management that are subject to known and unknown risks, uncertainties and assumptions. You are cautioned that any such forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and that actual results may differ materially from those projected in the forward-looking statements as a result of various factors.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, including the securities laws of the United States and the rules and regulations of the SEC, we do not plan to publicly update or revise any forward-looking statements contained herein after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and although we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted a thorough inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

This prospectus and the documents incorporated by reference in this prospectus may contain market data that we obtain from industry sources. These sources do not guarantee the accuracy or completeness of the information. Although we believe that our industry sources are reliable, we do not independently verify the information. The market data may include projections that are based on a number of other projections. While we believe these assumptions to be reasonable as of the date of this prospectus, actual results may differ from the projections.

USE OF PROCEEDS

We may receive up to approximately \$261.4 million, assuming the exercise in full of all of the Associated Warrants for cash. However, the exercise price of the Associated Warrants is \$11.50 per share, which exceeds \$4.74, the closing price of our Common Stock on the NYSE on September 29, 2023. The likelihood that warrant holders will exercise the Associated Warrants and any cash proceeds that we would receive is dependent upon the market price of our Common Stock. If the market price for our Common Stock is less than \$11.50 per share, we believe warrant holders will be unlikely to exercise their Associated Warrants. We expect to use any net proceeds from the exercise of the Associated Warrants for general corporate purposes.

We will not pay any brokers' or underwriters' discounts and commissions in connection with the registration and sale of the Common Stock covered by this prospectus. We will bear all other costs, fees and expenses incurred in effecting the registration of such securities covered by this prospectus, including, without limitation, all registration and filing fees, NYSE listing fees, and fees of our counsel and our independent registered public accountants.

DESCRIPTION OF COMMON STOCK

The description of our common stock is incorporated by reference to Exhibit $\underline{4.6}$ to our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on $\underline{\text{March 30, 2023}}$.

PLAN OF DISTRIBUTION

This prospectus relates to the offer by us of up to 22,733,236 shares of Common Stock issuable upon the exercise of an aggregate of 22,733,236 Associated Warrants, each of which is exercisable at a price of \$11.50 per share.

We will receive up to an aggregate of approximately \$261.4 million assuming the exercise in full of all of the Associated Warrants for cash. The likelihood that warrant holders will exercise the Associated Warrants and any cash proceeds that we would receive is dependent upon the market price of our Common Stock. If the market price for our Common Stock is less than \$11.50 per share, we believe warrant holders will be unlikely to exercise their Associated Warrants. We will not pay any brokers' or underwriters' discounts and commissions in connection with the registration and sale of the Common Stock covered by this prospectus.

We intend to keep the registration statement of which this prospectus forms a part effective until the earlier of the issuance of all shares of Common Stock pursuant to this prospectus and the expiration of the Associated Warrants.

We will bear all costs, fees and expenses incurred in effecting the registration of such securities covered by this prospectus, including, without limitation, all registration and filing fees, NYSE listing fees, and fees of our counsel and our independent registered public accountants.

Our Common Stock is currently listed on the NYSE under the symbols "AMPX."

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Additional legal matters may be passed on for us, or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of Amprius Technologies, Inc. as of and for the year ended December 31, 2022 incorporated by reference in this Prospectus and in the Registration Statement have been so incorporated in reliance on the report of BDO USA, LLP (n/k/a BDO USA, P.C.), an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

The financial statements of Amprius Technologies, Inc. as of December 31, 2021 and for the year ended December 31, 2021 have been audited by SingerLewak LLP, an independent registered public accounting firm, as stated in their report thereon and incorporated by reference into this prospectus in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at amprius.com. Information accessible on or through our website is not a part of this prospectus.

This prospectus and any prospectus supplement is part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. You should review the information and exhibits in the registration statement for further information on us and our consolidated subsidiaries and the securities that we are offering. Forms of any indenture or other documents establishing the terms of the offered securities are filed as exhibits to the registration statement of which this prospectus forms a part or under cover of a Current Report on Form 8-K and incorporated in this prospectus by reference. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should read the actual documents for a more complete description of the relevant matters.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information that we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated by reference in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents furnished rather than filed), from and after the

date on which the registration statement of which this prospectus forms a part is initially filed with the SEC and prior to the effectiveness of such registration statement, until the offering of the securities under the registration statement of which this prospectus forms a part is terminated or completed:

- our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 30, 2023;
- the portions of our Definitive Proxy Statement on Schedule 14A (other than information furnished rather than filed) that are incorporated by reference into our Annual Report on Form 10-K, filed with the SEC on April 27, 2023;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023 and June 30, 2023, filed with the SEC on May 11, 2023 and August 11, 2023, respectively;
- our Current Reports on Form 8-K filed with the SEC on <u>January 12, 2023, February 7, 2023, March 9, 2023, March 23, 2023, April 19, 2023, April 27, 2023, May 10, 2023, June 9, 2023, June 15, 2023, July 25, 2023 and September 21, 2023; and
 </u>
- the description of our common stock contained in Exhibit 4.6 to our Annual Report on Form 10-K for the year ended December 31, 2022 (as filed with the SEC on March 30, 2023), including any amendments or reports filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address and telephone number:

Amprius Technologies, Inc. 1180 Page Avenue Fremont, California 94538 Attn: Investor Relations (800) 425-8803

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth fees and expenses to be paid by us in connection with the issuance and distribution of the securities being registered, other than discounts and commissions to be paid to agents or underwriters. All amounts shown are estimates except for the Securities and Exchange Commission (the "SEC") registration fee.

| | to be Paid |
|--------------------------------------|--------------|
| SEC registration fee | \$ 28,810(1) |
| Legal fees and expenses | * |
| Accounting fees and expenses | * |
| Financial printing and miscellaneous | * |
| Total | \$28,810 |

^{*} These fees and expenses are calculated based on the securities offered and the number of issuances and accordingly cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law authorizes a corporation's board of directors to grant, and authorizes a court to award, indemnity to officers, directors and other corporate agents.

Our certificate of incorporation contains provisions that limit the liability of our directors and certain of our officers for monetary damages to the fullest extent permitted by the Delaware General Corporation Law. Consequently, our directors will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for the following:

- any breach of their duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- any transaction from which they derived an improper personal benefit.

Similarly, our officers who at the time of an act or omission as to which liability is asserted consented to or are deemed to have consented to certain service of process rules under Delaware law will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as officers, except for liability in connection with:

- any breach of their duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- · any transaction from which they derived an improper personal benefit; or
- any action by or in the right of the corporation.

¹⁾ Previously paid.

Any amendment, repeal or elimination of these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to that amendment, repeal or elimination. If the Delaware General Corporation Law is amended to provide for further limitations on the personal liability of directors or officers of corporations, then the personal liability of our directors and officers will be further limited to the greatest extent permitted by the Delaware General Corporation Law.

In addition, our bylaws provide that we will indemnify our directors and officers, and may indemnify our employees, agents and any other persons, to the fullest extent permitted by the Delaware General Corporation Law. Our bylaws also provide that we must advance expenses incurred by or on behalf of a director or officer in advance of the final disposition of any action or proceeding, subject to limited exceptions.

Further, we have entered into indemnification agreements with each of our directors and executive officers that may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements require us to, among other things, indemnify our directors and executive officers against liabilities that may arise by reason of their status or service. These indemnification agreements also generally require us to advance all expenses reasonably and actually incurred by our directors and executive officers in investigating or defending any such action, suit or proceeding. We believe that these agreements are necessary to attract and retain qualified individuals to serve as directors and executive officers.

The limitation of liability and indemnification provisions in our certificate of incorporation, bylaws and indemnification agreements may discourage stockholders from bringing a lawsuit against our directors and officers for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against our directors and officers as required by these indemnification provisions.

We have obtained insurance policies under which, subject to the limitations of the policies, coverage is provided to our directors and officers against loss arising from claims made by reason of breach of fiduciary duty or other wrongful acts as a director or officer, including claims relating to public securities matters, and to us with respect to payments that may be made by us to our directors and officers pursuant to our indemnification obligations or otherwise as a matter of law.

| Item 16. | Exhibits |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Exhibit <u>Number</u> | Description |
| 2.1† | Business Combination Agreement, dated as of May 11, 2022, by and among Kensington Capital Acquisition Corp. IV, Kensington Capital Merger Sub Corp. and Amprius Technologies, Inc. (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K (File No. 001-41314) filed with the SEC on May 12, 2022) |
| 2.2† | Agreement and Plan of Merger and Reorganization, dated as of May 9, 2023, among Amprius Technologies, Inc., Combine Merger Sub, Inc., Combine Merger Sub, LLC and Amprius, Inc. (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K (File No. 001-41314) filed with the SEC on May 12, 2022) |
| 3.1 | Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-41314) filed with the SEC on September 16, 2022) |
| 3.2 | Amended and Restated Bylaws of the Company (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-41314) filed with the SEC on March 23, 2023) |

| Exhibit Number | Description |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1 | Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 001-41314) filed with the SEC on September 16, 2022) |
| 4.2 | Warrant Agreement, dated as of March 1, 2022, between the Company and Continental Stock Transfer & Trust Company (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 001-41314) filed with the SEC on March 4, 2022) |
| 4.3 | Specimen Warrant Certificate (included in Exhibit 4.2) |
| 4.4 | Warrant Agreement, dated September 14, 2022, between the Company and Continental Stock Transfer & Trust Company (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K (File No. 001-41314) filed with the SEC on September 16, 2022) |
| 4.5 | Specimen PIPE Warrant Certificate (included in Exhibit 4.4) |
| 5.1* | Opinion of Wilson Sonsini Goodrich & Rosati, P.C. |
| 23.1 | Consent of SingerLewak LLP |
| 23.2 | Consent of BDO USA, P.C. |
| 23.3* | Consent of Wilson Sonsini Goodrich & Rosati, P.C. (included in Exhibit 5.1 hereto) |
| 24.1* | Power of Attorney for Dr. Kang Sun, Sandra Wallach, Donald R. Dixon, Dr. Steven Chu, Dr. Wen Hsieh and Justin Mirro |
| 24.2 | Power of Attorney for Kathleen Ann Bayless and Mary Gustanski |
| 101.CAL* | Inline XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.SCH* | Inline XBRL Taxonomy Extension Schema Document |
| 101.DEF* | Inline XBRL Taxonomy Extension Definition Linkbase Document |
| 101.LAB* | Inline XBRL Taxonomy Extension Labels Linkbase Document |
| 101.PRE* | Inline XBRL Taxonomy Extension Presentation Linkbase Document |
| 107 | Filing Fee Table |

^{*} Previously filed.

Item 17. Undertakings

- (a) The undersigned registrant hereby undertakes:
 - (1) to file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act;
- (ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in

[†] Certain schedules and exhibits have been omitted in accordance with Regulation S-K Item 601(a)(5). A copy of any omitted schedule or exhibit will be finished to the SEC upon request.

the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) that, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
 - (4) that, for the purpose of determining liability under the Securities Act to any purchaser:
- (i) each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
- (ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) that, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
- (i) any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

- (iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (6) that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (b) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Fremont, State of California, on October 2, 2023.

AMPRIUS TECHNOLOGIES, INC.

By: /s/ Dr. Kang Sun
Dr. Kang Sun
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Dr. Kang Sun and Sandra Wallach, and each of them, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this registration statement, including post-effective amendments, and registration statements filed pursuant to Rule 462 under the Securities Act, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith and about the premises, as fully for all intents and purposes as they, he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent or any of them, or their, his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

| Signature | Title | Date | | |
|--------------------------------------------------|----------------------------------------------------------------------|-----------------|--|--|
| /s/ Dr. Kang Sun Dr. Kang Sun | Chief Executive Officer and Director (Principal Executive Officer) | October 2, 2023 | | |
| /s/ Sandra Wallach Sandra Wallach | Chief Financial Officer (Principal Financial and Accounting Officer) | October 2, 2023 | | |
| * Donald R. Dixon | Director | October 2, 2023 | | |
| /s/ Kathleen Ann Bayless Kathleen Ann Bayless | Director | October 2, 2023 | | |
| * Dr. Steven Chu | Director | October 2, 2023 | | |
| * Dr. Wen Hsieh | Director | October 2, 2023 | | |

| Signature | Title | Date |
|-------------------------|----------|-----------------|
| * | Director | October 2, 2023 |
| Justin Mirro | | |
| /s/ Mary Gustanski | Director | October 2, 2023 |
| Mary Gustanski | | |
| *By: /s/ Dr. Kang Sun | | |
| Name: Dr. Kang Sun | | |
| Title: Attorney-in-Fact | | |

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Post-Effective Amendment No.1 to the Form S-1 Registration Statement (No. 333-271149) on Form S-3 of Amprius Technologies, Inc. of our report dated June 21, 2022 (except for the reverse recapitalization described in Note 1 as to which the date is November 16, 2022), relating to the financial statements of Amprius Technologies, Inc., appearing in the Annual Report on Form 10-K of Amprius Technologies, Inc. for the year ended December 31, 2022.

We also consent to the reference to our firm under the heading "Experts" in such Prospectus.

/s/ SingerLewak LLP

San Jose, California October 2, 2023 Amprius Technologies, Inc. Fremont, California

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement on Form S-3 of our report dated March 30, 2023, relating to the consolidated financial statements of Amprius Technologies, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2022.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ BDO USA, P.C. Houston, Texas

October 2, 2023

Post-Effective Amendment No. 1 to Form S-1 on Form S-3 (Form Type)

Amprius Technologies, Inc.

(Exact Name of Registrant as Specified in its Charter)

Calculation of Filing Fee Tables

Table 1: Newly Registered and Carry Forward Securities

| | Security Type | Security Class Title | Fee Calculation or Carry Forward Rule | Amount Registered(1) | Proposed Maximum Offering Price Per Unit | Maximum Aggregate Offering Price | Fee Rate | Amount of Registration Fee | Carry Forward Form Type | Carry Forward File Number | Carry Forward Initial effective date | Filing Fee Previously Paid In Connection with Unsold Securities to be Carried Forward |
|--------------------------------|----------------------------|--------------------------------------------------------------------------------|---------------------------------------------------|-------------------------|------------------------------------------------------|-------------------------------------------|-------------|----------------------------------|----------------------------------|------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| | | | | New | ly Registe | ered Securities | | | | | | |
| Fees to Be Paid | | | | | | | | | | | | |
| | Equity | Common stock, par value \$0.0001 per share, underlying warrants(2) | Other | 22,733,336(3) | 11.50(4) | \$261,433,364.00 | 0.00011020 | \$28,809.96 | _ | | _ | _ |
| | | | | Cai | ry Forwa | ard Securities | | | | | | |
| Carry Forward Securities | | | | | | | | | | | | |
| | Total Offering Amounts | | | | | \$261,433,364.00 | | \$28,809.96 | | | | |
| | Total Fees Previously Paid | | | | | | | \$3,921.80 | | | | |
| | Total Fee Offsets | | | | | | | \$24,888.16 | | | | |
| | | | | Net Fee Due | | | | \$ — | | | | |

- (1) Pursuant to Rule 416(a) under the Securities Act, this Registration Statement shall also cover any additional shares of the Registrant's common stock ("Common Stock") that become issuable as a result of any stock dividend, stock split, recapitalization, or other similar transaction effected without the receipt of consideration that results in an increase to the number of outstanding shares of Common Stock, as applicable.
- (2) Consists of 22,733,336 shares of the Registrant's Common Stock issuable by the Registrant upon the exercise of certain public warrants of the Registrant. A portion of these shares have been sold under this Registration Statement prior to the filing of this Post-Effective Amendment and therefore have been removed from the prospectus.
- (3) Calculated pursuant to Rule 457(g) under the Securities Act, based on the exercise price of the warrants.

Table 2: Fee Offset Claims and Sources

| | Registrant or Filer Name | Form or Filing Type | File Number | Initial Filing Date | Filing Date | Fee Offset Claimed | Security Type Associated with Fee Offset Claimed | Security Title Associated with Fee Offset Claimed | Unsold Securities Associated with Fee Offset Claimed | Unsold Aggregate Offering Amount Associated with Fee Offset Claimed | Fee Paid with Fee Offset Source | |
|-----------------------|--------------------------------------------------|------------------------------|----------------|---------------------------|----------------|--------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------|--|
| | Rule 457(p) | | | | | | | | | | | |
| Fee Offset Claims | Kensington Capital Acquisition Corp. IV | | 333-265740 | 06/21/2022 | | \$24,888.16(1) | Equity | Common stock issuable upon exercise of warrants | | \$268,480,698.16 | | |
| Fee Offset Sources | Kensington Capital Acquisition Corp. IV | | 333-265740 | | 06/21/2022 | | | | | | \$24,888.16 | |

⁽¹⁾ Pursuant to Rule 457(p) under the Securities Act, the Registrant is offsetting the registration fee due under this Registration Statement by \$24,888.16, which represents the portion of the registration fee paid with respect to unsold securities that had previously been included in the Registrant's registration statement on Form S-4, as amended (File No. 333-265740), which was originally filed with the Securities and Exchange Commission on June 21, 2022 and was declared effective by the Securities and Exchange Commission on September 1, 2022. The Registrant is withdrawing the unsold securities from such registration statement.