UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2023

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to

Commission File Number: 001-36247

Meta Materials Inc.

(Exact Name of Registrant as Specified in its Charter)

Nevada	**74-3237581**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
60 Highfield Park Drive Dartmouth, Nova Scotia, Canada	**B3A 4R9**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (902) 482-5729

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	**MMAT**	**Nasdaq Capital Market**

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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	☐	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 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of May 12, 2023, the registrant had 467,206,322 shares of common stock, $0.001 par value per share, outstanding.

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FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the federal securities laws, which statements involve substantial risks and uncertainties. Forward-looking statements generally relate to future events or our future financial or operating performance. In some cases, you can identify forward-looking statements because they contain words such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these words or other similar terms or expressions that concern our expectations, strategy, plans or intentions. Forward-looking statements contained in this Quarterly Report on Form 10-Q include statements about:

- our business strategy;
- our future performance;
- our strategy for protecting our intellectual property;
- our ability to obtain necessary funding on favorable terms or at all;
- our ability to retain and increase sales to existing customers;
- our plan and ability to secure revenues;
- the risk of competitors entering the market;
- our ability to expand operations, facilities and hire and retain skilled staff;
- our ability to obtain financing to fund future expenditures and capital requirements;
- our plans with respect to new facilities and the scaling of our manufacturing capabilities;
- the impact of adoption of new accounting standards;
- statements relating to the acquisition of Plasma App Ltd., or PAL, including but not limited to the effect the acquisition will have on significantly accelerating line speed and increase our annual capacity for NANOWEB® films as well as KolourOptik®security films;
- statements relating to the acquisition of Optodot Corporation, including but not limited to the effect that the acquisition will have on improving the performance of our medical products for signal to noise improvement in MRI scanning and offering simpler, faster, lower-cost assembly processes compatible with current and future battery chemistries;
- expectations regarding vehicle electrification;
- the capabilities of our technology, including but not limited to expectations regarding NANOWEB® capacity;
- our ability to maintain an adequate rate of revenue growth and our future financial performance, including our expectations regarding our revenue, gross profit or gross margin and operating expenses;
- our ability to expand our business, including to expand globally and into other markets;
- the sufficiency of our present cash and cash equivalents balances and cash flows;
- the effect of foreign currency fluctuation; and
- the effect of a global chip shortage.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this Quarterly Report on Form 10-Q.

You should not rely upon forward-looking statements as predictions of future events. We have based these forward-looking statements contained in this Quarterly Report on Form 10-Q largely on our current expectations and projections about future events and trends that we believe may affect our business, financial condition, results of operations, business strategy, short-term and long-term business operations and objectives and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in Part II, Item 1A, "Risk Factors" in this Quarterly Report on Form 10-Q. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for us to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this Quarterly Report on Form 10-Q may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

The forward-looking statements made in this Quarterly Report on Form 10-Q relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this Quarterly Report on Form 10-Q to reflect events or circumstances after the date of this Quarterly Report on Form 10-Q or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

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 Quarterly Report on Form 10-Q, and while 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 an exhaustive 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.

SUMMARY OF RISK FACTORS

Below is a summary of the principal factors that could materially harm our business, operating results and/or financial condition, impair our future prospects or cause the price of our common stock to decline. This summary does not address all of the risks that we face. Additional discussion of the risks summarized in this risk factor summary, and other risks that we face, can be found below under the heading "Risk Factors" and should be carefully considered, together with other information in this Quarterly Report on Form 10-Q and our other filings with the Securities and Exchange Commission, or the SEC, before making an investment decision regarding our common stock.

- We expect to continue to incur losses from operations and negative cash flows, which raise substantial doubt about our ability to continue as a going concern.
- We have a limited operating history, which can make it difficult for investors to evaluate our operations and prospects and may increase the risks associated with investing in us.
- We have a history of net losses, and we expect to continue to incur losses for the foreseeable future. If we ever achieve profitability, we may not be able to sustain it.
- We will need additional financing to execute our business plan and fund operations, for which additional financing may not be available on reasonable terms or at all.
- Our ability to obtain financing, if and when necessary, may be impaired by such factors as the capital markets and our limited operating history.
- Our operating results fluctuate significantly because of a number of factors, many of which are beyond our control.
- If we are unable to maintain effective disclosure controls and procedures, our business, financial position and results of operations could be adversely affected.
- We may be unable to develop new products, applications, and end markets for our products.
- Our research and marketing development activities and investments may not result in profitable, commercially viable or successfully produced and marketed products.
- Because our products typically have lengthy sales cycles, we may experience substantial delays between incurring expenses related to research and development and the generation of revenues.
- Disruption in supply from our single source supplier of our holographic raw materials may cause a material adverse effect on our Holography-related products.
- Fluctuations in the mix of products sold may adversely affect our financial results.
- Variations in the amount of time it takes for us to sell our systems may cause fluctuations in our operating results, which could cause our stock price to decline.
- Material weaknesses or significant deficiencies in our internal controls could materially and adversely affect our business, results of operations and financial condition.
- Impairment of our goodwill or other intangible assets could materially and adversely affect our business, operating results, and financial condition.
- We depend on our OEM customers and system integrators to incorporate our products into their systems.
- Our revenues may be concentrated in a few customers, and if we lose any of these customers, or these customers do not pay us, our revenues could be materially adversely affected.
- The markets in which we participate are intensely competitive.
- Our agreements with various national governments and suppliers to such governments subject us to unique risks.
- We are subject to the Foreign Corrupt Practices Act and similar anti-bribery and anti-corruption laws, as well as governmental export and import controls, all of which could subject us to liability or impair our ability to compete in international markets.
- We may experience delays in providing sufficient product for future testing of our products due to ongoing supply chain limitations.
- Change in laws, regulations or guidelines relating to our business plan and activities could adversely affect our business.
- If we are unable to make acquisitions, or successfully integrate them into our business, our results of operations and financial condition could be adversely affected.
- The regulatory approval process for our medical products in the United States and other countries around the world is time-consuming and complicated, and we may not obtain the approval required to market a product within the timeline required,

or at all. Additionally, we may lose regulatory approval and/or our products may become subject to new and anticipated foreign regulations.

- Development of medical devices and related operations are subject to extensive government regulation and oversight both in the United States and abroad, and our failure to comply with applicable requirements could harm our business.
- Healthcare policy changes, including recently enacted legislation reforming the U.S. healthcare system, could harm our business, financial condition, and results of operations.
- If coverage and reimbursement from third-party payors for procedures using our medical products significantly decline, physicians, hospitals, and other healthcare providers may be reluctant to use our products and our sales may decline.
- If we or our contractors fail to comply with healthcare and other governmental regulations, we could face substantial fines and penalties and our business, results of operations and financial condition could be adversely affected.
- If we fail to obtain and maintain necessary regulatory clearances, approvals, or certifications for our products, or if clearances, approvals or certifications for future products and indications are delayed or not issued, our commercial operations would be harmed.
- Semiconductors for inclusion in consumer products have shorter product life cycles.
- We may not be able to increase production capacity to meet the present and future demand for our products.
- Our gross margin is dependent on a number of factors, including our level of capacity utilization.
- Our success depends on our ability to manufacture our products efficiently.
- Increasing raw material prices could impact our profitability.
- Our revenues are dependent upon our products being designed into our customers' products.
- We rely on our distributors and sales representatives to sell some of our products.
- Costs related to product defects and errata may harm our results of operations and business.
- We order materials and commence production in advance of anticipated customer demand. Therefore, revenue shortfalls may also result in inventory write-downs.
- Our international operations expose us to material risks.
- Business interruptions may damage our facilities or those of our suppliers.
- We are exposed to risks that our employees, consultants, or other commercial partners and business associates may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements.
- Compliance with environmental laws and regulations could be expensive, and failure to comply with these laws and regulations could subject us to significant liability.
- Our insurance coverage strategy may not be adequate to protect us from all business risks.
- The risk of loss of our intellectual property, trade secrets or other sensitive business or customer confidential information or disruption of operations due to cyberattacks or data breaches could negatively impact our financial results.
- Cybersecurity breaches and information technology failures could harm our business by increasing our costs and negatively impacting our business operations.
- Changes in laws or regulations relating to privacy, information security and data protection, or any actual or perceived failure by us to comply with such laws and regulations or any other obligations, could adversely affect our business.
- We are subject to taxation-related risks in multiple jurisdictions, and the adoption and interpretation of new tax legislation, tax regulations, tax rulings, or exposure to additional tax liabilities could materially affect our business, financial condition and results of operations.
- Our ability to use our deferred tax assets to offset future taxable income is subject to certain limitations, which may have a material impact on our business, financial condition or results of operations.

Item 1. Financial Statements

META MATERIALS INC.

CONDENSED CONSOLIDATED INTERIM BALANCE SHEETS (UNAUDITED)

	As of March 31, 2023	As of December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 6,032,996	$ 10,090,858
Restricted cash	508,627	1,720,613
Accounts and other receivables	837,832	902,718
Notes receivable, net of allowance for credit losses	621,150	2,211,900
Inventory	459,619	468,027
Prepaid expenses and other current assets	8,008,047	7,202,099
Due from related parties	8,521	8,461
Total current assets	16,476,792	22,604,676
Intangible assets, net	54,894,466	56,313,317
Property, plant and equipment, net	43,668,481	42,674,699
Operating lease right-of-use assets	5,380,817	5,576,824
Goodwill	281,945,633	281,748,466
Total assets	$ 402,366,189	$ 408,917,982
Liabilities and stockholders' equity		
Current liabilities		
Trade and other payables	$ 15,770,279	$ 16,694,211
Current portion of long-term debt	655,485	483,226
Current portion of deferred revenues	730,952	730,501
Current portion of deferred government assistance	805,207	799,490
Current portion of operating lease liabilities	986,811	967,126
Total current liabilities	18,948,734	19,674,554
Deferred revenues	475,628	479,808
Deferred government assistance	388,455	319,017
Deferred tax liabilities	3,022,870	3,253,985
Long-term operating lease liabilities	3,244,799	3,375,031
Funding obligation	186,352	180,705
Long-term debt	3,129,219	3,070,729
Total liabilities	29,396,057	30,353,829
Stockholders' equity		
Common stock - $0.001 par value; 1,000,000,000 shares authorized, 383,744,889 shares issued and outstanding at March 31, 2023, and $0.001 par value; 1,000,000,000 shares authorized, 362,247,867 shares issued and outstanding at December 31, 2022	361,922	340,425
Additional paid-in capital	603,693,239	590,962,866
Accumulated other comprehensive loss	(4,920,023)	(5,242,810)
Accumulated deficit	(226,165,006)	(207,496,328)
Total stockholders' equity	372,970,132	378,564,153
Total liabilities and stockholders' equity	$ 402,366,189	$ 408,917,982

Commitments and contingencies (Note 20)

Subsequent events (Note 21)

The accompanying notes are an integral part of these condensed consolidated interim financial statements.

META MATERIALS INC.
CONDENSED CONSOLIDATED INTERIM STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS (UNAUDITED)

	Three months ended March 31,	
	2023	**2022**
Revenue:		
Product sales	$ 58,699	$ 168,127
Development revenue	1,353,560	2,806,568
Total revenue	1,412,259	2,974,695
Cost of goods sold	740,980	778,712
Gross profit	671,279	2,195,983
Operating expenses:		
Selling & marketing	2,525,446	1,035,986
General & administrative	10,185,571	14,597,913
Research & development	6,519,464	3,971,139
Total operating expenses	19,230,481	19,605,038
Loss from operations	(18,559,202)	(17,409,055)
Interest expense, net	(112,998)	(164,434)
Gain on foreign exchange, net	284,911	148,391
Other expenses, net	(578,120)	(1,009,443)
Total other expenses, net	(406,207)	(1,025,486)
Loss before income taxes	(18,965,409)	(18,434,541)
Income tax recovery	296,731	—
Net loss	$ (18,668,678)	$ (18,434,541)
Other comprehensive income net of tax		
Foreign currency translation gain	322,787	905,382
Total other comprehensive income	322,787	905,382
Comprehensive loss	$ (18,345,891)	$ (17,529,159)
Basic and diluted loss per share	$ (0.05)	$ (0.06)
Weighted average number of shares outstanding - basic and diluted	368,879,341	285,224,469

The accompanying notes are an integral part of these condensed consolidated interim financial statements.

META MATERIALS INC.

CONDENSED CONSOLIDATED INTERIM STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (UNAUDITED)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance, January 1, 2023	362,247,867	$ 340,425	$ 590,962,866	$ (5,242,810)	$ (207,496,328)	$ 378,564,153
Net loss	—	—	—	—	(18,668,678)	(18,668,678)
Other comprehensive income	—	—	—	322,787	—	322,787
Proceeds from issuance of common stock	17,573,969	17,574	10,459,495	—	—	10,477,069
Stock issuance costs	—	—	(438,785)	—	—	(438,785)
Proceeds from exercise of stock options	2,634,244	2,634	708,612	—	—	711,246
Settlement of restricted stock units	1,288,809	1,289	(1,289)	—	—	—
Stock-based compensation	—	—	2,002,340	—	—	2,002,340
Balance, March 31, 2023	383,744,889	$ 361,922	$ 603,693,239	$ (4,920,023)	$ (226,165,006)	$ 372,970,132
Balance, January 1, 2022	284,573,316	262,751	463,136,404	(296,936)	(128,394,104)	334,708,115
Net loss	—	—	—	—	(18,434,541)	(18,434,541)
Other comprehensive income	—	—	—	905,382	—	905,382
Proceeds from exercise of stock options	730,249	730	196,437	—	—	197,167
Proceeds from exercise of warrants	1,623,700	1,625	167,950	—	—	169,575
Stock-based compensation	—	—	4,191,984	—	—	4,191,984
Balance, March 31, 2022	286,927,265	$ 265,106	$ 467,692,775	$ 608,446	$ (146,828,645)	$ 321,737,682

The accompanying notes are an integral part of these condensed consolidated interim financial statements.

META MATERIALS INC.
CONDENSED CONSOLIDATED INTERIM STATEMENTS OF CASH FLOWS (UNAUDITED)

	Three months ended March 31,	
	2023	**2022**
Cash flows from operating activities:		
Net loss	$ (18,668,678)	$ (18,434,541)
Adjustments to reconcile net loss to net cash used in operating activities:		
Non-cash finance income	—	(12,920)
Non-cash interest expense	137,657	126,714
Non-cash interest income	(391,111)	—
Non-cash lease expense	401,528	240,548
Deferred income tax	(296,731)	—
Depreciation and amortization	3,244,511	1,672,969
Loss from disposal of property and equipment	18,843	—
Credit loss expense	981,861	—
Unrealized foreign currency exchange gain	(221,535)	(140,902)
Change in deferred revenue	(4,580)	(79,146)
Non-cash government assistance	—	(3,047)
Stock-based compensation	2,002,343	3,995,442
Non-cash consulting expense	—	196,541
Changes in operating assets and liabilities	(2,724,270)	(6,306,857)
Net cash used in operating activities	(15,520,162)	(18,745,199)
Cash flows from investing activities:		
Purchases of property, plant and equipment	(1,693,768)	(1,746,936)
Proceeds from short-term investments	—	2,884,999
Proceeds from below-market capital government loan	256,240	—
Proceeds from collection of notes receivable	1,000,000	—
Net cash (used in) provided by investing activities	(437,528)	1,138,063
Cash flows from financing activities:		
Proceeds from issuance of common stock	10,477,069	—
Stock issuance costs paid on the issuance of common stock	(438,785)	—
Repayments of long-term debt	(85,457)	(91,641)
Proceeds from stock option exercises	711,246	197,167
Proceeds from warrants exercises	—	169,575
Net cash provided by financing activities	10,664,073	275,101
Net decrease in cash, cash equivalents and restricted cash	(5,293,617)	(17,332,035)
Cash, cash equivalents and restricted cash at beginning of the period	11,811,471	47,434,472
Effects of exchange rate changes on cash, cash equivalents and restricted cash	23,769	126,233
Cash, cash equivalents and restricted cash at end of the period	$ 6,541,623	$ 30,228,670
Supplemental cash flow information		
Accrued purchases of property and equipment	1,998,469	1,772,821
Right-of-use assets obtained in exchange for lease liabilities	—	146,822

The accompanying notes are an integral part of these condensed consolidated interim financial statements.

1. Corporate information

Meta Materials Inc. (also referred to herein as the "Company", "META", "we", "us", or "our") is a developer of high-performance functional materials and nanocomposites. We are developing materials that we believe can improve the performance and efficiency of many current products as well as allow new products to be developed that cannot otherwise be developed without such materials. We believe META is positioned for growth, by pioneering a new category of intelligent surfaces, which will allow us to become the metamaterials industry leader. We enable our potential customers across a range of industries - consumer electronics, 5G communications, healthcare, aerospace, automotive, and clean energy - to deliver improved products to their customers. For example, our nano-optic metamaterial technology provides anti-counterfeiting security features for a Central Bank customer and currencies and authentication for Global brands. We currently have over 500 active patent documents, of which 315 patents have issued.

Our principal executive office is located at 60 Highfield Park Drive, Dartmouth, Nova Scotia, Canada.

2. Significant accounting policies

Basis of presentation

These unaudited condensed consolidated interim financial statements and related notes are presented in accordance with accounting principles generally accepted in the United States of America, or US GAAP. Our fiscal year-end is December 31. The condensed consolidated interim financial statements include the accounts of Meta Materials Inc. and its wholly-owned subsidiaries. All significant intercompany balances and transactions have been eliminated on consolidation.

These unaudited condensed consolidated interim financial statements do not include all of the information and notes required by US GAAP for annual financial statements. Accordingly, these unaudited condensed consolidated interim financial statements should be read in conjunction with our audited consolidated financial statements and notes for the years ended December 31, 2022 and 2021, filed with the SEC on Forms 10-K and 10-K/A, respectively.

Recently Adopted Accounting Pronouncements

ASU 2021-08:
In October 2021, the Financial Accounting Standards Board, or FASB, issued ASU 2021-08, Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers, which clarifies that an acquirer of a business should recognize and measure contract assets and contract liabilities in a business combination in accordance with ASC Topic 606, Revenue from Contracts with Customers. We adopted the guidance on January 1, 2023 and its adoption did not have a material effect on our condensed consolidated interim financial statements and related disclosures.

Recently Issued Accounting Pronouncements

We currently have no material recent accounting pronouncements yet to be adopted.

3. Going Concern

At each reporting period, we evaluate whether there are conditions or events that raise substantial doubt about our ability to continue as a going concern within one year after the date that the financial statements are issued. Our evaluation entails analyzing prospective operating budgets and forecasts for expectations of our cash needs and comparing those needs to the current cash and cash equivalent balances. We are required to make certain additional disclosures if we conclude substantial doubt exists and it is not alleviated by our plans or when our plans alleviate substantial doubt about our ability to continue as a going concern.

In accordance with Accounting Standards Codification, or ASC, 205-40, *Going Concern*, we evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about our ability to continue as a going concern within one year after the date that these consolidated financial statements are issued. This evaluation initially does not take into consideration the potential mitigating effect of management's plans that have not been fully implemented as of the date the financial statements are issued. When substantial doubt exists under this methodology, management evaluates whether the mitigating effect of its plans sufficiently alleviates substantial doubt about our ability to continue as a going concern. The mitigating effect of management's plans, however, is only considered if both (1) it is probable that the plans will be effectively implemented within one year after the date that the condensed consolidated interim financial statements are issued, and (2) it is probable that the plans, when implemented, will mitigate the relevant conditions or events that raise substantial doubt about the entity's ability to continue as a going concern within one year after the date

that these condensed consolidated interim financial statements are issued. In performing its analysis, management excluded certain elements of its operating plan that cannot be considered probable.

We have incurred net losses of $18.7 million and $79.1 million for the three months ended March 31, 2023 and the twelve months ended December 31, 2022, respectively, and have an accumulated deficit of $226.2 million as of March 31, 2023. Our expectation to generate operating losses and negative operating cash flows in the future and the need for additional funding to support our planned operations, raise substantial doubt regarding our ability to continue as a going concern for a period of one year after the date that these condensed consolidated interim financial statements are issued. Management's plans to alleviate the conditions that raise substantial doubt include reduced spending, and the pursuit of additional capital. Management has concluded the likelihood that its plan to successfully obtain sufficient funding from one or more of these sources, or adequately reduce expenditures, while highly possible, is less than probable because these plans are not entirely within our control and/or have not been approved by our Board of Directors as of the date of these condensed consolidated interim financial statements. If we are unsuccessful in obtaining financing, we will be required to assess alternative forms of action. Accordingly, we have concluded that substantial doubt exists about our ability to continue as a going concern for a period of at least 12 months from the date of issuance of these condensed consolidated interim financial statements.

The accompanying condensed consolidated interim financial statements have been prepared on a going concern basis, which contemplates the realization of assets and satisfaction of liabilities in the ordinary course of business. The condensed consolidated interim financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of the uncertainties described above. These adjustments may be material.

4. Acquisitions

Plasma App Ltd acquisition

On April 1, 2022, we completed the purchase of 100% of the issued and outstanding shares of PAL, or the PAL acquisition. PAL is the developer of PLASMAfusion®, a proprietary manufacturing platform technology, which enables high speed coating of any solid material on any type of substrate. PAL’s team is located at the Rutherford Appleton Laboratories in Oxford, UK.

The acquisition was accounted for as a business combination in accordance with ASC 805.

The following table presents the preliminary allocation of consideration paid for the PAL acquisition and fair value of the assets and liabilities acquired:

		Amount (USD)
Fair value of common stock issued	$	15,290,320
Fair value of deferred consideration		1,698,926
	$	16,989,246
Net assets of PAL:		
Cash and cash equivalents	$	13,822
Other assets		36,104
Intangibles		12,600,000
Deferred tax liability		(3,150,000)
Goodwill		7,489,320
	$	16,989,246

Acquired intangible assets totaling $12.6 million relate to a developed technology intangible asset. The significant estimates and assumptions used by us in the determination of the fair value of the acquired developed technology intangible asset includes the revenue growth rate and the discount rate. The goodwill resulting from the transaction is attributable to assembled workforce, synergies, technical know-how and expertise. The fair value of acquired assets and liabilities was measured as at the acquisition date based on a valuation report provided by a third-party valuation expert.

Losses from the PAL acquisition since the acquisition date included in the condensed consolidated interim statements of operations and comprehensive loss for the three months ended March 31, 2023 were $0.6 million.

There were no changes to the preliminary purchase price allocation during the three months ended March 31, 2023. The preliminary purchase price allocation continues to remain subject to change as additional information becomes available concerning the tax basis of the assets acquired. Any additional adjustments, if applicable, to the purchase price allocation will be finalized during the three months ended June 30, 2023.

Optodot acquisition

On June 22, 2022, we completed a purchase agreement with Optodot Corporation, or Optodot, a developer of advanced materials technologies, to acquire certain assets related to patents and intellectual property for the battery and other industries, or the Optodot acquisition. The consideration transferred included the following:

The acquisition was accounted for as a business combination in accordance with ASC 805. The transaction was structured as a tax-free re-organization pursuant to Internal Revenue Code Section 368(a)(1)(c). Accordingly, the tax basis of net assets acquired retain their carryover tax basis and holding period.

The following table presents the preliminary allocation of consideration paid for the Optodot acquisition and fair value of the assets and liabilities acquired:

		Amount (USD)
Fair value of unrestricted common stock issued or to be issued	$	41,791,115
Fair value of restricted common stock issued		8,342,152
Cash consideration		3,500,000
Total consideration	$	53,633,267
Net assets of Optodot:		
Intangibles		23,300,000
Deferred tax liability		(4,893,000)
Goodwill		35,226,267
	$	53,633,267

Acquired intangible assets totaling $23.3 million relate to a developed technology intangible asset. The significant estimates and assumptions used by us in the determination of the fair value of the acquired developed technology intangible asset includes the revenue growth rate and the discount rate. The goodwill resulting from the transaction is attributable to assembled workforce, synergies, technical know-how and expertise. The fair value of acquired assets and liabilities has been measured as at the acquisition date based on a valuation report provided by a third-party valuation expert.

Losses from the Optodot acquisition since the acquisition date included in the condensed consolidated interim statements of operations and comprehensive loss for the period ended March 31, 2023 were $0.5 million.

There were no changes to the preliminary purchase price allocation during the three months ended March 31, 2023. The preliminary purchase price allocation continues to remain subject to change as additional information becomes available concerning the tax basis of the assets acquired. Any additional adjustments, if applicable, to the purchase price allocation will be finalized during the three months ended June 30, 2023.

5. Related party transactions

As of March 31, 2023, and December 31, 2022, receivables due from a related party (Lamda Guard Technologies Ltd, or Lamda) were $8,521 and $8,461, respectively.

6. Notes Receivable

Notes receivable consists of an amount due from Next Bridge Hydrocarbons Inc., or Next Bridge, which was previously a wholly-owned subsidiary of Meta, until the completion of the spin-off transaction on December 14, 2022. One note is partially secured by a combination of Meta's common shares and an interest in the Orogrande Project Property. The notes receivables have been recognized at their fair value, as of December 14, 2022, subsequent to the deconsolidation of Next Bridge from our consolidated financial results.

Amounts owing from Next Bridge include:

- An October 2021 secured promissory note, or the 2021 Note, principal amount of $15.0 million. The 2021 Note bears interest at 8% per annum, and had an original maturity date of March 31, 2023, which has since been extended to October 3, 2023, or the 2021 Note Maturity Date, as described below. If an event of default has occurred and is continuing, interest on the 2021 Note may accrue at the default rate of 12% per annum. The outstanding principal of the 2021 Note, together with all accrued interest thereon, becomes due on the 2021 Note Maturity Date. The 2021 Note is secured by a security interest in (a) a Stock Pledge Agreement dated as of September 30, 2021 between Gregory McCabe, the Pledgor, and us, or the Stock Pledge Agreement, for 1,515,000 shares of our common shares that are owned directly and beneficially by the Pledgor, and (b) pursuant to a Deed of Trust, Mortgage, Security Agreement, Fixture Filing, Financing Statement and Assignment of Production dated as of September 30, 2021 made by Wolfbone Investments, LLC for our benefit, or the Security Agreement, a 25% working interest beneficially owned by the Pledgor in the Orogrande Project Property as defined in the Security Agreement.
- An unsecured note receivable for principal amount of $5.0 million, or the 2022 Note. The 2022 Note is due and payable on the 2021 Maturity Date. The 2022 Note bears interest at a fixed rate of 8% per annum if no event of default exists, and at a fixed rate of 12% per annum if an event of default exists.
- Accrued interest on the 2021 Note and 2022 Note totaling $2.0 million as of March 31, 2023.
- Certain costs borne by us in effecting the deconsolidation for which we expect to be reimbursed by Next Bridge.

On March 31, 2023, in exchange for a prepayment of $1.0 million of the currently outstanding principal of the aforementioned loans, we agreed with Next Bridge on the following: (a) extended the maturity date of the 2022 Note from March 31, 2023 to October 3, 2023, and (b) increased the total amount of commitments and loans made by us to Next Bridge under the Loan Agreement by $2.6 million to reflect the abovementioned costs incurred in effecting the deconsolidation.

In addition, on March 31, 2023, we amended the 2021 Note issued and payable by Next Bridge to us, to extend the maturity date from March 31, 2023 to October 3, 2023. The existing liens securing the 2021 Note were also reaffirmed by the grantors of such liens.

We assessed the fair value of the notes receivable on the deconsolidation date in accordance with ASC 820, *Fair Value Measurement*, and recorded $2.2 million of fair value of the Next Bridge notes receivable as of December 31, 2022. In accordance with ASC 326, *Financial Instruments – Credit losses*, we elected a practical expedient to account for the Next Bridge notes receivable as collateral-dependent assets, whereby estimated credit losses are based on the fair value of the collateral. Based on the fair value of the collateral as of March 31, 2023, we recorded interest income of $0.4 million and notes receivable of $0.6 million, net of allowance for credit losses of $1.0 million.

7. Inventory

Inventory consists of photosensitive materials, lenses, laser protection film and finished eyewear, and is comprised of the following:

	As of March 31, 2023	As of December 31, 2022
Raw materials	$ 479,698	$ 490,077
Supplies	10,914	11,345
Work in process	54,061	51,589
Finished goods	42,091	42,058
Inventory provision	(127,145)	(127,042)
Total inventory	$ 459,619	$ 468,027

8. Prepaid expenses and other current assets

Prepaid expenses and other current assets consist of the following:

	As of March 31, 2023	As of December 31, 2022
Prepaid expenses	$ 3,065,930	$ 2,835,660
Other current assets	339,513	365,583
Taxes receivable	4,602,604	4,000,856
Total prepaid expenses and other current assets	$ 8,008,047	$ 7,202,099

9. Property, plant and equipment, net

Property, plant and equipment consist of the following:

	Useful life (years)	As of March 31, 2023	As of December 31, 2022
Land	N/A	$ 439,666	$ 439,309
Building	25	5,067,206	5,063,091
Computer equipment	3-5	1,324,615	775,736
Computer software	1	647,423	606,729
Manufacturing equipment	2-5	22,801,333	22,701,761
Office furniture	5-7	835,764	660,549
Leasehold improvements	5-10	18,655,487	2,172,134
Enterprise Resource Planning software	5	197,809	197,648
Assets under construction	N/A	5,460,973	20,337,338
		55,430,276	52,954,295
Accumulated depreciation and impairment		(11,761,795)	(10,279,596)
		$ 43,668,481	$ 42,674,699

Depreciation expense was $1.5 million and $0.8 million for the three months ended March 31, 2023, and 2022, respectively.

Property, plant and equipment is pledged as security under a General Security Agreement, or a GSA, signed in favor of the Royal Bank of Canada, or RBC, on July 14, 2014, which is related to our corporate bank account and credit card and includes all property, plant and equipment and intangible assets.

10. Intangible assets and goodwill

Intangible assets

Intangible assets consist of the following:

	Useful life (years)	As of March 31, 2023	As of December 31, 2022
Patents	5-10	$ 42,512,375	$ 42,111,143
Trademarks		125,334	124,845
Developed technology	20	13,988,030	13,976,668
Customer contract	5	9,606,148	9,598,348
		66,231,887	65,811,004
Accumulated amortization and impairment		(11,337,421)	(9,497,687)
		$ 54,894,466	$ 56,313,317

Amortization expense was $1.8 million and $0.9 million for the three months ended March 31, 2023 and 2022, respectively.

Goodwill

Goodwill at December 31, 2022	$ 281,748,466
Effect of foreign exchange on goodwill	197,167
Goodwill at March 31, 2023	$ 281,945,633

Goodwill is tested for impairment annually as of December 31 or more frequently when events or changes in circumstances indicate that impairment may have occurred.

11. Long-term debt

	As of March 31, 2023	As of December 31, 2022
Atlantic Canada Opportunities Agency, or ACOA, Business Development Program, or BDP, 2012 interest-free loan[1] with a maximum contribution of CA$500,000, repayable in monthly repayments commencing October 1, 2015, of CA$5,952 until June 1, 2023. Loan repayments were temporarily paused effective April 1, 2020, until January 1, 2021, as a result of the COVID-19 outbreak. As of March 31, 2023, the amount of principal drawn down on the loan, net of repayments is CA$17,664 (2022 - CA$35,714).	$ 13,053	$ 25,880
ACOA Atlantic Innovation Fund, or AIF, 2015 interest-free loan [1,2] with a maximum contribution of CA$ 3,000,000. Annual repayments, commencing June 1, 2021, are calculated as a percentage of gross revenue for the preceding fiscal year, at Nil when gross revenues are less than CA$1,000,000, 5% when gross revenues are less than CA$10,000,000 and greater than CA$1,000,000, and CA$500,000 plus 1% of gross revenues when gross revenues are greater than CA$10,000,000. As of March 31, 2023, the amount or principal drawn down on the loan, net of repayments, is CA$2,048,653 (2022 - CA$2,661,293).	1,513,819	1,449,493
ACOA BDP 2018 interest-free loan [1,3] with a maximum contribution of CA$3,000,000, repayable in monthly repayments commencing June 1, 2021, of CA$31,250 until May 1, 2029. As of March 31, 2023, the amount of principal drawn down on the loan, net of repayments, is CA$1,502,875 (2022 - CA$2,406,250).	1,110,526	1,136,556
ACOA PBS 2019 interest-free loan [1] with a maximum contribution of CA$100,000, repayable in monthly repayments commencing June 1, 2021, of CA$1,400 until May 1, 2027. As of March 31, 2023, the amount of principal drawn down on the loan, net of repayments, is CA$45,530 (2022 - CA$73,611).	33,495	34,750
ACOA Regional Relief and Recovery Fund, or RRRF, 2020 interest-free loan with a maximum contribution of CA$390,000, repayable on monthly repayments commencing April 1, 2023, of CA$11,000 until April 1, 2026. As of March 31, 2023, the principal amount drawn down on the loan is CA$390,000 (2022 - CA$390,000).	174,392	159,642
Economic Development Agency of Canada for the Regions of Quebec, or EDC, 2022 interest-free loan [4] with a maximum contribution of CA$2,000,000 (CA$1,000,000 for building renovations and CA$1,000,000 for acquisition of equipment for Nanotech). Repayable in 60 monthly installments of CA$30,000, with the first repayment due in January 2026. As of March 31, 2023, the principal amount drawn down on the loan is CA$1,800,000 (2022 - CA$1,454,167).	939,419	747,634
	3,784,704	3,553,955
Less: current portion	(655,485)	(483,226)
	$ 3,129,219	$ 3,070,729

[1] We were required to maintain a minimum balance of positive equity throughout the term of the loan. However, on November 14, 2019, ACOA waived this requirement for the period ending June 30, 2019 and for each period thereafter until the loan is fully repaid.

[2] The carrying amount of the ACOA AIF loan is reviewed each reporting period and adjusted as required to reflect management's best estimate of future cash flows, discounted at the original effective interest rate.

[3] A portion of the ACOA BDP 2018 loan was used to finance the acquisition and construction of manufacturing equipment resulting in $425,872 that was recorded as deferred government assistance, which is being amortized over the useful life of the associated equipment.

[4] The EDC 2022 loan was used to finance building renovations and equipment purchase resulting in $400,537 of deferred government assistance as of March 31, 2023, which is being amortized over the useful life of the associated building and equipment.

12. Capital stock

Common stock

Authorized: 1,000,000,000 common shares, $0.001 par value.

During the three months ended March 31, 2023, 2,634,244 stock options were exercised to purchase an equal number of common shares. In addition, 1,288,809 restricted stock units have vested and settled into an equal number of common shares.

At-the-Market Equity Offering Program:

On February 10, 2023, we entered into a sales agreement, or the ATM Agreement, with an investment bank to conduct an "at-the-market" equity offering program, or the ATM, pursuant to which we may issue and sell, shares of our common stock, par value $0.001 per share, up to an aggregate of $100.0 million of shares of common stock, or the ATM Shares, from time to time.

Under the ATM Agreement, we set the parameters for the sale of ATM Shares, including the number of ATM Shares to be issued, the time period during which sales are requested to be made, limitations on the number of ATM Shares that may be sold in any one trading day and any minimum price below which sales may not be made. Sales of the ATM Shares, if any, under the ATM Agreement may be made in transactions that are deemed to be “at-the-market offerings” as defined in Rule 415 under the Securities Act of 1933, as amended, or the Securities Act.

During the three months ended March 31, 2023, we sold a total of 17,573,969 shares of our common stock under the ATM at a weighted average price of $0.60 per share, generating gross proceeds of $10.5 million and net proceeds of $10.0 million after offering expenses. As of March 31, 2023, $89.5 million of common stock remained eligible for sale under the ATM Agreement.

Registered direct offering:

On June 24, 2022, we entered into a securities purchase agreement, or the SPA, as amended and restated on June 27, 2022, with certain institutional investors for the purchase and sale in a registered direct offering of 37,037,039 shares of our common stock at a purchase price of $1.35 per share and warrants to purchase 37,037,039 shares at an exercise price of $1.75 per share. This resulted in gross proceeds from the offering of $50.0 million and net proceeds of $46.3 million.

The gross proceeds were allocated between common stock and accompanying warrants based on their relative fair values. The fair value of common stock was calculated based on the closing share price on June 27, 2022 of $1.15. The fair value of the warrants was estimated using the Black-Scholes option pricing model. Accordingly, we have allocated $27.9 million as the fair value of common stock and $18.5 million as the fair value of warrants.

The warrants are exercisable six months after the date of issuance, expire five and a half years from the date of issuance and have an exercise price of $1.75 per share of common stock. We have evaluated the warrants as either equity-classified or liability-classified instruments based on an assessment of the warrants’ specific terms and applicable authoritative guidance in ASC 480, “Distinguishing Liabilities from Equity” and ASC 815, “Derivatives and Hedging”. We have concluded that the warrants are considered indexed to our common shares and as such they have been classified as equity.

13. Stock-based payments

On December 3, 2021, our shareholders approved the 2021 Equity Incentive Plan to utilize the 3,500,000 shares reserved and unissued under the Torchlight 2015 Stock Option and Grant Plan and the 6,445,745 shares reserved and unissued under the MMI 2018 Stock Option and Grant plan to set the number of shares reserved for issuance under the 2021 Equity Incentive Plan at 34,945,745 shares.

The 2021 Equity Incentive Plan allows the grants of non-statutory stock options, restricted stock, restricted stock units, or RSUs, stock appreciation rights, performance units and performance shares to employees, directors, and consultants.

DSU Plan

On March 28, 2013, we implemented a Deferred Stock Unit, or DSU, Plan for our directors, employees and officers. Directors, employees and officers are granted DSUs with immediate vesting as a form of compensation. Each unit is convertible at the option of the holder into one common share. Eligible individuals are entitled to receive all DSUs (including dividends and other adjustments) no later than December 1st of the first calendar year commencing after the time of termination of their services.

As of March 31, 2023, there were 3,910,186 outstanding DSUs. There were no new DSUs issued, no DSUs exercised and no DSUs expired during the three months ended March 31, 2023.

RSU Plan

Each unit is convertible at the option of the holder into one common share of our shares upon meeting the vesting conditions.

Total stock-based compensation expense related to RSUs included in the condensed consolidated interim statements of operations was as follows:

	Three months ended March 31,	
	2023	2022
Cost of sales	$ 143,905	$ 50,653
Selling & marketing	120,544	15,493
General & administrative	403,207	120,165
Research & development	419,021	97,211
	$ 1,086,677	$ 283,522

The following table summarizes the change in outstanding RSUs:

	Number of RSUs #	Weighted Average grant date fair value
Outstanding, December 31, 2022	6,506,922	$ 1.71
Forfeited	(105,126)	$ 1.21
Vested and settled	(1,288,809)	$ 2.78
Outstanding, March 31, 2023	5,112,987	$ 1.45
Vested but not settled, March 31, 2023	82,486	$ 1.21

Employee Stock Option Plan

Each stock option is convertible at the option of the holder into one common share upon payment of the exercise price.

Total stock-based compensation expense related to stock options included in the condensed consolidated interim statements of operations and comprehensive loss was as follows:

	Three months ended March 31,	
	2023	2022
Selling & marketing	$ 99,242	$ 4,393
General & administrative	499,042	3,283,469
Research & development	317,379	424,058
	$ 915,663	$ 3,711,920

The following table summarizes the change in our outstanding stock options:

	Number of options #	Average exercise price per stock option	Average exercise remaining contractual term (years)	Aggregate intrinsic value
Outstanding, December 31, 2022	33,595,044	$ 0.80	9.31	$ 17,611,251
Exercised	(2,634,244)	$ 0.27		
Forfeited	(150,254)	$ 1.23		
Outstanding, March 31, 2023	30,810,546	$ 0.85	8.43	$ 2,291,214
Exercisable, March 31, 2023	24,032,721	$ 0.78	7.36	$ 2,092,965

Below is a summary of the outstanding options as of March 31, 2023 and December 31, 2022:

	As of March 31, 2023		As of December 31, 2022	
Range of exercise price	Number outstanding #	Number exercisable #	Number outstanding #	Number exercisable #
$0.12 - $0.27	15,494,412	14,078,345	18,128,657	15,549,318
$0.89 - $1.00	2,984,668	1,822,394	2,984,668	1,822,394
$1.17 - $1.26	2,638,701	950,326	2,782,704	932,082
$1.31 - $1.58	6,723,654	4,212,545	6,729,904	3,054,672
$1.97 - 2.00	2,969,111	2,969,111	2,969,111	2,969,111
	30,810,546	24,032,721	33,595,044	24,327,577

14. Income taxes

We estimate our annual effective income tax rate in recording our quarterly provision for income taxes in the various jurisdictions in which we operate. Statutory tax rate changes and other significant or unusual items are recognized as discrete items in the quarter in which they occur.

Our effective tax rate for the three months ended March 31, 2023 differs from the statutory rates due to valuation allowance as well as different domestic and foreign statutory tax rates.

Deferred tax recovery for the three months ended March 31, 2023 and 2022 was $0.3 million and $Nil, respectively.

We have not yet been able to establish profitability or other sufficient significant positive evidence, to conclude that our deferred tax assets are more likely than not going to be realized. Therefore, we continue to maintain a valuation allowance against our deferred tax assets.

15. Net loss per share

The following table sets forth the calculation of basic and diluted net loss per share during the periods presented:

	Three months ended March 31, 2023	Three months ended March 31, 2022
Numerator:		
Net loss	$ (18,668,678)	$ (18,434,541)
Denominator:		
Weighted-average shares, basic	368,879,341	285,224,469
Weighted-average shares, diluted	368,879,341	285,224,469
Net loss per share		
Basic	$ (0.05)	$ (0.06)
Diluted	$ (0.05)	$ (0.06)

The following potentially dilutive shares were not included in the calculation of diluted shares above as the effect would have been anti-dilutive:

	As of March 31, 2023	As of March 31, 2022
Options	30,810,546	27,505,109
Warrants	39,920,919	2,583,880
RSUs	5,112,987	4,132,278
DSUs	3,910,186	3,647,026
	79,754,638	37,868,293

16. Additional cash flow information

The net changes in non-cash working capital balances related to operations consist of the following:

	As of March 31, 2023	2022
Grants receivable	$ —	$ 146,950
Inventory	8,812	(96,285)
Accounts and other receivables	66,159	(821,774)
Prepaid expenses and other current assets	(792,684)	(342,711)
Trade payables	(1,687,578)	(5,062,908)
Due to related party	(60)	(54,051)
Operating lease right-of-use Asset	—	(56)
Operating lease liabilities	(318,919)	(76,022)
	$ (2,724,270)	$ (6,306,857)

17. Fair value measurements

We use a fair value hierarchy, based on the relative objectivity of inputs used to measure fair value, with Level 1 representing inputs with the highest level of objectivity and Level 3 representing the lowest level of objectivity.

The fair values of cash and cash equivalents, restricted cash, short-term investments, grants and accounts receivable, due from related parties and trade and other payables approximate their carrying values due to the short-term nature of these instruments. The current portion of long-term debt has been included in the below table.

The fair value of our notes receivable from Next Bridge is classified at Level 3 in the fair value hierarchy. See Note 6 for further details.

The fair values of the funding obligation and long-term debt would be classified at Level 3 in the fair value hierarchy, as each instrument is estimated based on unobservable inputs including discounted cash flows using the market rate, which is subject to similar risks and maturities with comparable financial instruments as at the reporting date.

Carrying values and fair values of financial instruments that are not carried at fair value are as follows:

	As of March 31, 2023		As of December 31, 2022	
Financial liability	**Carrying value**	**Fair value**	**Carrying value**	**Fair value**
Funding obligation	$ 186,352	$ 246,625	$ 180,705	$ 85,411
Long-term debt	$ 3,784,704	$ 4,099,747	$ 3,553,955	$ 2,663,460

18. Revenue

We have one operating segment based on how management internally evaluates separate financial information, business activities and management responsibility.

Revenue is disaggregated as follows:

	Three months ended March 31, 2023	2022
Product sales	$ 58,699	$ 168,127
Contract revenue [1]	1,353,560	2,706,568
Other development revenue	—	100,000
Development revenue	1,353,560	2,806,568
	$ 1,412,259	$ 2,974,695

[1] A portion of contract revenue represents previously recorded deferred revenue that was recognized as revenue after satisfaction of performance obligations either through passage of time or after completion of specific performance milestones.

Customer concentration

A significant amount of our revenue is derived from contracts with major customers. For the three months ended March 31, 2023, revenue from one customer accounted for $1.3 million or 89% of total revenue. We currently derive a significant portion of our revenue from contract services with a G10 central bank. In 2021, we acquired a development contract for up to $41.5 million over a period of up to five years. In 2022, we were awarded a $4.3 million purchase order under this contract. These contract services incorporate both nano-optic and optical thin film technologies and are focused on developing authentication features for future banknotes.

For the three months ended March 31, 2022, we had one customer that accounted for $2.7 million or 90% of total revenue.

19. Leases

There were no new lease agreements during the three months ended March 31, 2023. We entered into the following lease during the three months ended March 31, 2022:

Burnaby lease expansion

On February 25, 2022, we entered into an agreement to amend our Burnaby lease, or the expansion, to expand the premises by an additional 1,994 square feet, commencing on June 1, 2022, for a period of two years and eleven months. The agreement provides the tenant with early access to the premises at least three months prior to the commencement date to conduct leasehold improvements. We obtained access to the premises on March 25, 2022 and consequently recognized a right-of-use asset and liability for the expansion as of March 31, 2022, of $146,822.

Total operating lease expense included in the condensed consolidated interim statements of operations and comprehensive loss is as follows:

	Three months ended March 31,	
	2023	2022
Operating lease expense	$ 400,450	$ 515,770
Short term lease expense	79,563	92,259
Variable and other lease expense	66,528	60,428
Total	$ 546,541	$ 668,457

We completed our evaluation of the provisions of ASC 842, *Leases*, and elected the practical expedient to not capitalize any leases with initial terms of less than twelve months on our balance sheet and include them as short-term lease expense in the condensed consolidated interim statements of operations and comprehensive loss.

Future minimum payments under non-cancelable operating lease obligations were as follows as of March 31, 2023:

Remainder of 2023	$ 948,054
2024	1,269,852
2025	1,159,813
2026	1,001,885
Thereafter	2,924,616
Total minimum lease payments	7,304,220
Less: interest	(3,072,610)
Present value of net minimum lease payments	4,231,610
Less: current portion of lease liabilities	(986,811)
Total long-term lease liabilities	$ 3,244,799

20. Commitments and contingencies

Legal Matters

SEC Subpoena:

In September 2021, we received a subpoena from the Securities and Exchange Commission, Division of Enforcement, in a matter captioned In the Matter of Torchlight Energy Resources, Inc. The subpoena requests that we produce certain documents and information

related to, among other things, the merger involving Torchlight Energy Resources, Inc. and Metamaterial Inc. We are cooperating and intend to continue to cooperate with the SEC's investigation. We can offer no assurances as to the outcome of this investigation or its potential effect, if any, on us or our results of operation.

Securities Class Action:

On January 3, 2022, a putative securities class action lawsuit was filed in the U.S. District Court for the Eastern District of New York captioned Maltagliati v. Meta Materials Inc., et al., No. 1:21-cv-07203, against us, our Chief Executive Officer, our Chief Financial Officer, Torchlight's former Chairman of the Board of Directors, and Torchlight's former Chief Executive Officer. On January 26, 2022, a similar putative securities class action lawsuit was filed in the U.S. District Court for the Eastern District of New York captioned McMillan v. Meta Materials Inc., et al., No. 1:22-cv-00463. The McMillan complaint names the same defendants and asserts the same claims on behalf of the same purported class as the Maltagliati complaint. The complaints, purportedly brought on behalf of all purchasers of our publicly traded securities from September 21, 2020 through and including December 14, 2021, assert claims under Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, or the Exchange Act, arising primarily from a short-seller report and statements related to our business combination with Torchlight. The complaints seek unspecified compensatory damages and reasonable costs and expenses, including attorneys' fees. On July 15, 2022, the Court consolidated these actions under the caption In re Meta Materials Inc. Securities Litigation, No. 1:21-cv-07203, appointed lead plaintiffs and approved the lead plaintiffs' selection of lead counsel. Lead plaintiffs filed a consolidated complaint on August 29, 2022. We moved to dismiss that complaint on October 13, 2022. The motion was fully briefed on January 12, 2023. The Court held a hearing on the motion to dismiss on February 27, 2023 and took the motion under submission.

Shareholder Derivative Action:

On January 14, 2022, a shareholder derivative action was filed in the U.S. District Court for the Easter District of New York captioned Hines v. Palikaras, et al., No. 1:22-cv-00248. The complaint names as defendants certain of our current officers and directors, certain former Torchlight officers and directors, and us (as nominal defendant). The complaint, purportedly brought on our behalf, asserts claims under Section 14(a) of the Exchange Act, contribution claims under Sections 10(b) and 21D of the Exchange Act, and various state law claims such as breach of fiduciary duties and unjust enrichment. The complaint seeks, among other things, unspecified compensatory damages in our favor, certain corporate governance related actions, and an award of costs and expenses to the derivative plaintiff, including attorneys' fees. On March 9, 2022, the Court entered a stipulated order staying this action until there is a ruling on a motion to dismiss in the securities class action.

Westpark Capital Group:

On July 25, 2022, WestPark Capital Group, LLC filed a complaint in Los Angeles County Superior Court against us for breach of contract, alleging that it is owed a $450,000 commission as a placement agent with respect to our June 2022 direct offering. On August 31, 2022, we filed an answer to the complaint. We dispute that WestPark Capital Group placed the investor in the direct offering and is owed a commission.

Contractual Commitments and Purchase Obligations

a) During 2018, we arranged a guarantee/standby letter of credit with RBC in favor of Satair A/S for $500,000 in relation to an advance payment received. In the event we fail to deliver the product as per the contract or refuse to accept the return of the product as per the buyback clause of the contract or fails to repay the advance payment in accordance with the conditions of the agreement signed with Satair on September 18, 2018, Satair shall draw from the letter of credit with RBC. Borrowings from the letter of credit with RBC are repayable on demand. The letter of credit from RBC is secured by a performance security guarantee cover issued by Export Development of Canada. Further, this guarantee/standby letter of credit expires on October 5, 2023. As of March 31, 2023, no amount has been drawn from the letter of credit with RBC.

b) On December 8, 2016, we entered into a cooperation agreement with a large aircraft manufacturer to co-develop laser protection filters for space and aeronautical civil and military applications, metaAIR®, and support the setup of manufacturing facilities for product certification and development. The cooperation agreement includes financial support provided to us in the form of non-recurring engineering costs of up to $4.0 million to be released upon agreement of technical milestones in exchange for a royalty fee due by us on gross profit after sales and distribution costs. The total royalty fee to be paid may be adjusted based on the timing of our sales and the amount ultimately paid to us by large aircraft manufacturer to support the development.

c) Certain nano-optic products are subject to a 3% sales royalty in favor of Simon Fraser University, or SFU, where certain elements of the nano-optic technology originated. Royalties were $925 during the three months ended March 31, 2023 (2022 - $1,575). In 2014, our wholly owned subsidiary, Nanotech, prepaid royalties that would offset against future royalties owed as part of the transfer of the intellectual property from SFU, of which $194,516 remains prepaid as at March 31, 2023 (December 31, 2022 - $195,441).

d) Product revenue associated with six patents acquired by Nanotech is subject to royalties. We agreed to share 10% of any revenues related to the patents received from a specific customer for a period of two years and ongoing royalties of 3% to 6% on other revenues derived from the patents for a period of five years. There were no royalties during the three months ended March 31, 2023 (2022 - $Nil).

e) On September 1, 2022, we entered into an operating lease agreement for the space of approximately 11,642 Square Footage for an office in a building located in Columbia, Maryland, USA. This was not recognized as an operating lease as of March 31, 2023, as we have not yet occupied premises as of March 31, 2023, due to ongoing construction with a lease term of 132 months onwards with an option to renew the lease for an additional 5 years. There are step-up lease payments for each 12-month period from lease commencement, with the first 12 months fully abated.

f) On October 1, 2022, we entered into an operating lease agreement for the space of approximately 12,655 Square Feet on the 2nd Floor of Building One, in two separate sections: Phase 1: 8,097 Rentable Square Footage; and Phase 2: 4,558 Rentable Square Footage in a commercial building located in Billerica, Massachusetts, USA. This was not recognized as an operating lease as of March 31, 2023, as we have not yet occupied either premise as of March 31, 2023, due to ongoing renovations. The lease terms are 5 years and 6 months for both spaces commencing from the delivery date in which each space will be made readily available. Lease payments are to commence from the delivery date for each Phase until the end of the lease term with an option to renew the lease for an additional 5 years. Annual Lease payments will be $18.00 per Square Feet in the Lease Year 1, $18.50 per Square Foot in Lease Year 2, $19.00 per Square Foot in Lease Year 3, $19.50 per Square Foot in Lease Year 4, and $20.00 per Square Feet in Lease Year 5.

g) As of March 31, 2023, we had ongoing commitments for maintenance contracts and asset purchases as follows:

Remainder of 2023	$	265,101
2024		557,749
2025		569,240
2026		583,795
Thereafter		5,207,113
	$	7,182,998

21. Subsequent events

On April 14, 2023, we entered into an underwriting agreement, or the Underwriting Agreement, with Ladenburg Thalmann & Co. Inc. and A.G.P/Global Alliance Partners, or the underwriters, relating to our public offering of (i) 83,333,334 shares of our common stock, par value $0.001 and (ii) warrants to purchase up to an aggregate of 83,333,334 shares of our common stock. The shares of common stock and warrants were sold together as a fixed combination, consisting of one share of common stock and a warrant to purchase one share of common stock, but are immediately separable and will be issued separately in the offering. Each warrant is exercisable to purchase one share of common stock at a price of $0.375 per share, or Exercise Price, subject to certain adjustments in the case of a Share Combination Event or a Dilutive Issuance as described below, and expires five years from the date of issuance. The combined price to the public in the offering for each share of common stock and accompanying warrant was $0.30. After deducting underwriting discounts and commissions and estimated offering expenses payable by us, the net proceeds were approximately $22.1 million.

If at any time and from time to time on or after April 18, 2023, the issue date of warrants, or Issue Date, and prior to the second anniversary of the Issue Date there occurs any Share Combination Event (as defined below) and the Event Market Price (as defined below) is less than the Exercise Price, then on the sixth trading day immediately following such Share Combination Event, the Exercise Price on such sixth trading day shall be reduced (but in no event increased) to the Event Market Price; provided, however, that in no event shall the Event Market Price be less than $0.076 (appropriately adjusted for any Share Combination Event occurring after the Issue Date), or the Floor Price.

Share Combination Event occurs when we (i) pay a stock dividend or otherwise make a distribution or distributions on shares of our common stock or any other equity or equity equivalent securities payable in shares of common stock (which, for avoidance of doubt, shall not include any shares of common stock issued by us upon exercise of this warrant), (ii) subdivide outstanding shares of common stock into a larger number of shares, (iii) combine (including by way of reverse stock split) outstanding shares of common stock into a smaller number of shares, or (iv) issue by reclassification of shares of our common stock any shares of our capital stock. “Event Market Price” means, with respect to any Share Combination Event Date, the quotient determined by dividing (x) the sum of the volume weighted average price of the shares of common stock for each of the five trading days following such Share Combination Event divided by (y) five. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, recapitalization or other similar transaction during such period.

In addition, if at any time prior to April 18, 2024, we grant, issue or sell, or are deemed to have granted issued or sold, any shares of our Common Stock, subject to certain exceptions, for a consideration per share, or the New Issuance Price less than a price equal to the exercise price of the warrants then in effect, the foregoing a Dilutive Issuance, then immediately after such Dilutive Issuance, the exercise price then in effect will be reduced to an amount equal to the greater of the New Issuance Price and the Floor Price.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our condensed consolidated interim financial statements and related notes thereto included in Part I, Item I of this Quarterly Report on Form 10-Q. For additional information regarding our financial condition and results of operations, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in Part II, Item 7 in the Amendment No. 1 to our Annual Report on Form 10-K/A for the year ended December 31, 2022, filed with the SEC on March 24, 2023, or the Form 10-K/A, as well as our consolidated financial statements and related notes thereto included in Part II, Item 8 of the Form 10-K/A. As discussed in the section titled "Forward-Looking Statements," the following discussion contains forward-looking statements that involve risks and uncertainties. Factors that could cause or contribute to such differences include those identified below and those discussed in the "Part II, Item 1A (Risk Factors)" and other parts of this Quarterly Report on Form 10-Q and in the Form 10-K/A. Our historical results are not necessarily indicative of the results that may be expected for any period in the future.

OVERVIEW

Meta Materials Inc. (also referred to herein as the "Company", "META®", "META" "we", "us", or "our") is a developer of high-performance functional materials and nanocomposites. We are developing materials that we believe can improve the performance and efficiency of many current products as well as allow new products to be developed that cannot otherwise be developed without such materials. We believe META is positioned for growth, by pioneering a new category of intelligent surfaces, which will allow us to become the metamaterials industry leader. We enable our potential customers across a range of industries - consumer electronics, 5G communications, healthcare, aerospace, automotive, and clean energy - to deliver improved products to their customers. Our principal executive office is located at 60 Highfield Park Drive, Dartmouth, Nova Scotia, Canada.

Throughout 2022, new emphasis was placed on investments in pilot scale manufacturing of our NANOWEB® products, expansion of our production capacity in our banknote and brand security lines, and more aggressive design, development and clinical testing of our broad array of medical products. For more information regarding our business, see Part I, Item I (Business), of the Form 10-K/A.

After the acquisition of Nanotech in October 2021, our net revenues had increased until the third quarter ended September 30, 2022 due to an increase in development service which incorporate both nano-optic and optical thin film technologies and contract revenue related to authentication features for banknotes. Revenue has decreased in the past two consecutive quarters, due to a completion of some contracts and a decrease in product sales. A weakening of Canadian Dollar against U.S. Dollar also contributed to the decrease in overall sales during those quarters.

Overall, our operating expenses had an increasing trend throughout the year ended December 31, 2022 due to the expansion in our facilities and the recent acquisitions. Our selling and marketing expenses decreased, however, in the first quarter ended March 31 2023, mainly due to a decrease in accrued bonuses. Our general and administrative expenses also decreased in the first quarter ended March 31, 2023 mainly due to a decrease in legal and audit fees and accrued bonus and stock-based compensation expenses. On the other hand, our research and development expenses increased during the first quarter ended March 31, 2023, compared to the fourth quarter ended December 31, 2022, due to an increase in salaries and benefits.

Recent Developments

Underwritten Public Offering

On April 14, 2023, we entered into the Underwriting Agreement, relating to our public offering of (i) 83,333,334 shares of our common stock, par value $0.001 and (ii) warrants to purchase up to an aggregate of 83,333,334 shares of our common stock. The shares of common stock and warrants were sold together as a fixed combination, consisting of one share of common stock and a warrant to purchase one share of common stock, but are immediately separable and will be issued separately in the offering. Each warrant is exercisable to purchase one share of common stock at a price of $0.375 per share, subject to certain adjustments in the case of a Share Combination Event or a Dilutive Issuance as described in more detail in Note 21, *Subsequent events*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q, and expires five years from the date of issuance. The combined price to the public in the offering for each share of common stock and accompanying warrant was $0.30. After deducting underwriting discounts and commissions and estimated offering expenses payable by us, the net proceeds were approximately $22.1 million. See Note 21, *Subsequent events*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q for further information.

Appointment of Chief Financial Officer and Chief Operating Officer; Appointment of Two New Directors

On April 19, 2023, Maurice Guitton notified our Board of his intention to resign and retire effective immediately. Mr. Guitton has indicated that his departure from the Board was not the result of any disagreement with management or the Board but was in order to pursue his retirement more fully.

Also on April 19, 2023, after taking into account Mr. Guitton's retirement, the Board increased its size from seven to eight members and appointed Vyomesh Joshi and Eugenia Corrales to the Board. Ms. Corrales was also appointed to serve on the audit committee of the Board and Mr. Joshi was appointed to serve on the governance and nominating committee of the Board.

Mr. Joshi and Ms. Corrales will each participate in our Outside Director Compensation Plan, including an initial grant of Restricted Stock Units valued at $100,000. Each of Mr. Joshi or Ms. Corrales will enter into our standard form of indemnification agreement for directors and executive officers.

On April 20, 2023, Kenneth Rice was terminated as our Chief Financial Officer and Chief Operating Officer and decided to retire and on April 21, 2023, Jonathan Waldern was terminated as our Chief Technology Officer. In connection with their departures, each of Mr. Rice and Mr. Walden is expected to receive the severance payment and benefits provided under his respective employment agreement with us for a termination without cause, subject to his execution of a release and discharge agreement and compliance with post-termination restrictive covenants.

Also on April 20, 2023, Uzi Sasson was appointed as our Chief Financial Officer and Chief Operating Officer. Mr. Sasson assumed the duties of the principal financial officer and principal accounting officer as of his date of hire.

On April 20, 2023, we entered into an executive employment agreement with Mr. Sasson, or the Sasson Employment Agreement, pursuant to which we agreed to employ Mr. Sasson as our Chief Financial Officer and Chief Operating Officer, effective as of the Effective Date, for an indefinite term in consideration of an initial annual base salary of $375,000. Mr. Sasson is eligible to receive an annual bonus with a target of 65% of his base salary as determined by the Board in its sole discretion, based on achievement of Company performance and Mr. Sasson's individual performance goals. This annual bonus will be prorated for 2023. In addition, in connection with the execution of the Employment Agreement with us, Mr. Sasson will be eligible to receive a stock option to purchase 300,000 shares of our common stock which will vest 25% annually over four years, subject to Mr. Sasson's continued service with us through each vesting date. Mr. Sasson will also be eligible to receive a long-term incentive equity grant with an aggregate grant date value of $500,000 (an "LTIP Grant"), computed using the Black Scholes valuation model, subject to Mr. Sasson's continued employment through the grant date. The LTIP Grant will consist of 50% in stock options and 50% in restricted stock units and is expected to vest over a four-year period, with 25% of such options and restricted stock units vesting annually over the next four years after the date of grant. In the event that Mr. Sasson's employment with us is terminated, he will be eligible for severance benefits in accordance with our established policies, if any, then in effect.

In accordance with our customary practice, we will also enter into our standard form of indemnification agreement with Mr. Sasson.

Next Bridge (formerly known as "OilCo") Loan Agreement Amendment

On March 31, 2023, or the Amendment Effective Date, in exchange for a prepayment of $1,000,000 of the outstanding principal of the unsecured loans made by us to Next Bridge and its subsidiaries under the Loan Agreement dated as of September 2, 2022 (as amended by a First Amendment to Loan Agreement dated as of December 21, 2022, and as further amended from time to time), or the Loan Agreement, among us, as lender, and Next Bridge and its subsidiaries, as co-borrowers, (collectively, the "Parties"), the Parties, as of the Amendment Effective Date, (a) extended the maturity date under the Loan Agreement from March 31, 2023 to October 3, 2023, and (b) increased the total amount of commitments and loans made by us to Next Bridge and its subsidiaries under the Loan Agreement to $7,589,361.77 (before giving effect to such $1,000,000 prepayment) in aggregate principal.

In addition, on March 31, 2023, the 8% Secured Promissory Note, dated October 1, 2021 (as amended by that certain First Amendment Agreement, dated as of September 2, 2022, and as further amended from time to time), or the Secured Note, issued and payable by Next Bridge to us, was amended to extend the maturity date of the Secured Note from March 31, 2023 to October 3, 2023. The existing liens securing the Secured Note were also reaffirmed by the grantors of such liens.

The preceding descriptions of the amendments are qualified in their entireties by reference to the full texts of the copies of the First Amendment to the Loan Agreement filed herewith as Exhibit 10.1, the Second Amendment to the Loan Agreement filed herewith as Exhibit 10.2, the First Amendment to the Secured Note filed herewith as Exhibit 10.3, and the Second Amendment to the Secured

Note filed herewith as Exhibit 10.4, in each case, to this Current Report on Form 10-Q, respectively, which are incorporated herein by reference.

See Note 6, *Notes Receivable,* in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q for further information.

Known Trends and Uncertainties:

Inflation

A prolonged period of inflation in Europe, for energy costs in particular, could cause shortages or material cost increases for certain key raw materials, for which we depend on European suppliers. In particular, shortages or cost increases in certain polymers used in our Holography products could result in higher costs for these products that may not be able to be passed on to our customers.

Inflation in North America, for labor costs and transportation costs in particular, could elevate our costs of hiring new team members and cause increases in our labor costs for existing team members. In addition, rising transportation costs are likely to increase our costs for shipping our products and the costs associated with our material purchases.

Vehicle Electrification

The transition from internal combustion engine, or ICE, vehicles to electric vehicles, or EVs, may be accelerated by recent disruptions in global oil supply, reduced investment in new domestic oil exploration, and increased government support for domestic EV production, battery and battery materials supply chain, and EV charging infrastructure. This may increase the opportunity for META to scale up battery materials production, acquire new battery component customers, and obtain government funding for capital projects. It could also accelerate demand for certain of our NANOWEB® products targeting EVs'.

Global Chip Shortage

A global shortage of computer chips has triggered significant delays in product launches in the automotive industry. Should these shortages continue, META could experience on-going delays in orders for our NANOWEB® products from this vertical market since these products are intended to be incorporated into planned new models.

Expanding Operations, Facilities and Staffing

META is expanding capacity and facilities to support a growing range of market opportunities. This includes a new headquarters facility in Dartmouth, Nova Scotia; expanded production capacity in Thurso, Quebec; and new development facilities in Maryland for Electro Optics and IR, and in Massachusetts for the Battery Materials team. These activities require capital investments, increased overhead for leased facilities, and higher operating expenses for personnel additions. The timing of new customer programs and revenues associated with these expansions is uncertain and META may require additional financing to support the related cash consumption.

Expanding Focus and Emphasis on Information Technology

With the rapid growth of our global business, our data protection and cyber security needs have become a significant element of our business. Failure on our part to invest in the tools, equipment and personnel required to adequately manage these elements could result in regulatory issues, claims by customers and potential financial liabilities. Further, customer prospects identifying such failures could decide to delay or abandon orders from us.

NANOWEB® Capacity

Our NANOWEB® products have not yet reached the required manufacturing scale to enable us to address the volume demands of a number of our target vertical markets. We must either design, develop and procure additional internal capacity to produce NANOWEB® in higher volume and larger formats or identify outsourced suppliers capable of producing our designs. Internal capacity expansion may require higher capital expenditures and faces risk of supply chain delays. Outsourced production may increase variable costs and put pressure on gross margins as we scale volumes.

Foreign Currency Fluctuation Risk

As we continue to expand our business globally, we presently have currency exposure arising from both sales and purchases denominated in foreign currencies. Fluctuations in the value of currencies, such as Canadian Dollar, British Pound and Euro against the US Dollar

could adversely impact our revenue and operating and labor costs. In addition, items included in the financial statements of each of META and its subsidiaries are measured using the currency of the primary economic environment in which the entity operates (the "functional currency") while our reporting currency is in US Dollar. As such, our financial results and positions are exposed to changes in exchange rates between the US Dollar and Canadian Dollar, the British Pound, and Euro. For the three months ended March 31, 2023, almost all of our consolidated revenue and 49.5% of operating expenses were recorded in our entities which functional currency is other than US Dollar and approximately 85.6% of Cash and Cash equivalent, 85.3% of Property and Equipment, and 47.4% of Accounts Payable and Accruals were recorded in such entities which functional currency is other than US Dollar. Revenues during the third and fourth quarters in the year ended December 31, 2022 and the first quarter ended March 31, 2023 were adversely impacted by a weakening of Canadian Dollar.

Recent Acquisitions:

Plasma App Ltd.

On April 1, 2022, we completed the purchase of 100% of the issued and outstanding shares of PAL through the issuance of 10,752,687 common shares with an estimated fair value on the closing date of $17 million. The number of shares were calculated as the sum of 9,677,419 shares, equal to $18,000,000 divided by $1.86 (the volume weighted average price for the ten trading days ending on March 31, 2022), and 1,075,268 shares, equal to $2,000,000 divided by $1.86, to be issued at a later date subject to satisfaction of certain claims and warranties.

PAL is the developer of PLASMAfusion®, a first of its kind, proprietary manufacturing platform technology, which enables high speed coating of any solid material on any type of substrate. The PAL team is located at the Rutherford Appleton Laboratories in Oxford, UK. We expect to apply PLASMAfusion® to the metallization step in our roll-to-roll production process for NANOWEB® films as well as KolourOptik® security films. This is expected to significantly accelerate line speed and increase annual capacity. PAL is also developing coated copper current collectors for lithium-ion batteries as a replacement for solid copper foils. Thin layers of copper deposited on both sides of a polyester substrate via PLASMAfusion® offer significant weight reduction, increasing energy density, while the polyester inner layer acts like a fuse, inhibiting thermal runaway to enhance battery safety.

Optodot Corporation

On June 22, 2022, we completed an asset purchase agreement with Optodot to acquire certain assets related to patents and intellectual property for the battery and other industries through the issuance of a combination of cash of $3.5 million and common stock of 26,809,234 shares with an estimated total fair value on the closing date of $53.6 million. The number of shares were calculated as the sum of 22,348,190 shares, equal to $37,500,000 divided by $1.68 (the volume weighted average price for the twenty trading days ending on June 21, 2022), and 4,461,044 shares, equal to $7,500,000 divided by $1.68, to be issued at a later date subject to certain vesting milestones as set forth in the purchase agreement.

Optodot is a leading developer and licensor of nano-composite battery separators and infrared optical coating technologies. Its NPORE® separators eliminate the use of plastic substrate and provide superior functionality and outstanding heat resistance for current and next generation lithium-ion batteries. Its NANOPORE® nanoporous membrane technology is also intended to be used to improve the performance of our medical products, in particular, our radiWISE product for signal to noise improvement in MRI scanning. Also, its Electrode Coated Separators (ECS) combine what is presently two discrete functions in the LI batteries and offer a simpler, faster, lower-cost assembly process compatible with current and future battery chemistries.

See Note 4, *Acquisitions*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q for further information.

Basis of Presentation

The following discussion highlights our results of operations and the principal factors that have affected our financial condition as well as our liquidity and capital resources for the periods described and provides information that management believes is relevant for an assessment and understanding of the condensed consolidated interim balance sheet and statements of operation and comprehensive loss presented herein. The following discussion and analysis are based on our condensed consolidated interim financial statements contained in this Quarterly Report, which we have prepared in accordance with U.S. GAAP. You should read the discussion and analysis together with such condensed consolidated interim financial statements and the related notes thereto.

Critical Accounting Estimates

Our condensed consolidated interim financial statements and the related notes thereto are prepared in accordance with GAAP. The preparation of condensed consolidated interim financial statements also requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs and expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. Actual results could differ significantly from our estimates. To the extent that there are differences between our estimates and actual results, our future financial statement presentation, financial condition, results of operations and cash flows will be affected.

There have been no material changes to our critical accounting estimates as described in our Annual Report on Form 10-K/A for the year ended December 31, 2022.

Recent Accounting Pronouncements

For a description of recent accounting pronouncements, including the expected dates of adoption and estimated effects, if any, on our condensed consolidated interim financial statements, please see Note 2, *Significant accounting policies*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q.

RESULT OF OPERATIONS

Revenue and Gross Profit:

Our revenue is generated from product sales as well as development revenue. We recognize revenue when we satisfy performance obligations under the terms of our contracts, and control of our products is transferred to our customers in an amount that reflects the consideration we expect to receive from our customers in exchange for those products or services.

Product Sales

Product sales include products, components, and samples sold to our customers. Revenue from the sale of prototypes and finished products is recognized at the point in time when control of the asset is transferred to the customer, generally on delivery of goods. We consider whether there are other obligations in the contract that are separate performance obligations to which a portion of the transaction price needs to be allocated. In determining the transaction price for the sale of prototypes, we consider the effects of variable consideration, the existence of significant financial components, non-cash consideration and consideration payable to the customer (if any).

Development Revenue

Development Revenue consists of revenues from contract services and research services, including non-recurring engineering services. Revenue from development activities is recognized over time, using an input method to measure progress towards complete satisfaction of the research activities and associated performance obligations identified within each contract have been satisfied.

Cost of Goods Sold

Cost of Goods Sold consists of direct material used in production, depreciation expenses of machinery and equipment used in production, salaries and benefits relating to the production staff, and other overheads allocated to production.

	Three months ended March 31,		Change	
	2023	2022	$	%
Product sales	$ 58,699	$ 168,127	$ (109,428)	-65 %
Development revenue	1,353,560	2,806,568	(1,453,008)	-52 %
Total Revenue	1,412,259	2,974,695	(1,562,436)	-53 %
Cost of goods sold	740,980	778,712	(37,732)	-5 %
Gross Profit	$ 671,279	$ 2,195,983	$ (1,524,704)	-69 %
Gross Profit percentage	48 %	74 %	-26 %	

Comparison of the Three Months Ended March 31, 2023 to the Three Months Ended March 31, 2022:

Product Sales

The decrease in product sales for the three months ended March 31, 2023 of $0.1 million, as compared to the same period of 2022, is primarily due to reduction in sales orders.

Development Revenue

The decrease in development revenue for the three months ended March 31, 2023 of $1.5 million is mainly due to the decrease in our Lithography revenue - banknotes applications due to the completion of certain development contracts in 2022. We derive a significant portion of our revenue from contract services with a confidential G10 central bank. In 2021, we acquired Nanotech which had a development contract for up to $41.5 million over a period of up to five years. These contract services incorporate both nano-optic and optical thin film technologies and are focused on developing authentication features for future banknotes.

Cost of Goods Sold

Cost of goods sold for the three months ended March 31, 2023 slightly decreased mainly due to a decrease in material consumption.

Operating expenses

	Three months ended March 31,		Change	
	2023	2022	$	%
Operating Expenses				
Selling & Marketing	$ 2,525,446	$ 1,035,986	$ 1,489,460	144 %
General & Administrative	10,185,571	14,597,913	(4,412,342)	-30 %
Research & Development	6,519,464	3,971,139	2,548,325	64 %
Total operating expenses	$ 19,230,481	$ 19,605,038	$ (374,557)	-2 %

Selling & Marketing

The increase in selling & marketing expenses of $1.5 million for the three months ended March 31, 2023, as compared to the same period of 2022, is mainly due to a $1.0 million increase in salaries and benefits, including a $0.2 million increase in non-cash equity compensation due to increases in headcount in the latter part of 2022 to acquire talent and grow the sales and marketing team. In addition, consulting fee increased by $0.5 million in the first quarter ended March 31, 2023, compared to the same period ended March 31, 2022.

General & Administrative

The reduction in general & administrative expenses of $4.4 million for the three months ended March 31, 2023, as compared to the same period of 2022, is primarily due to a $4.0 million reduction in professional fees mainly due to the reduced legal cost associated with the SEC investigation and lawsuits, acquisition related costs and consulting fees, $1.7 million net reduction in salaries and benefits as a result of a $2.5 million reduction in non-cash equity compensation and $0.8 million increase in salaries, partially offset by an increase of $1.2 million in depreciation and amortization expenses mainly due to intangible assets acquired in Q2 2022 as part of the PAL and Optodot acquisitions as well as an increase in depreciation expense due to acquired equipment in different facilities, and $0.4 million increase in travel, subscription and other expenses.

Research & Development

The increase in research & development expenses of $2.5 million for the three months ended March 31, 2023, as compared to the same period of 2022, is primarily due to a $1.7 million increase in salaries and benefits including a $0.2 million increase in non-cash equity compensation due to increase in our head count through all locations as a result of 1) expansion in facilities and laboratories, and 2) the

acquisitions of PAL and Optodot in Q2 2022, $0.4 million increase in R&D materials and patent fees and $0.3 million net increase in travel, subscription and depreciation expenses.

Other expenses, net

	Three months ended March 31,		Change	
	2023	2022	$	%
Other expenses, net:				
Interest expense, net	$ (112,998)	$ (164,434)	$ 51,436	-31 %
Gain on foreign exchange, net	284,911	148,391	136,520	92 %
Other expenses, net	(578,120)	(1,009,443)	431,323	-43 %
Total other expense, net	$ (406,207)	$ (1,025,486)	$ 619,279	-60 %

Interest expense, net

The change in net interest expense, net, of $0.1 million for the three months ended March 31, 2023, as compared to the same period of 2022, is primarily due to decreased interest accretions recognized during the first quarter ended March 31, 2023.

Gain on foreign exchange, net

The increase in net gain on foreign exchange, net, for the three months ended March 31, 2023, compared to the same period of 2022, is primarily driven by revaluations of intercompany balances in different currencies, mainly as a result of the devaluation of different currencies against the US dollar during Q1 2023.

Other expenses, net

The decrease in other expense, net, of $0.4 million for the three months ended March 31, 2023, as compared to the same period of 2022, is primarily due to a $1.0 million of credit loss provision expense for the notes receivable from Next Bridge in accordance with ASC 326, partially offset by a $0.4 million of interest income accrued for the Next Bridge notes receivable.

Income Tax recovery

	Three months ended March 31,		Change	
	2023	2022	$	%
Income tax recovery	$ 296,731	$ -	$ 296,731	100 %

The increase in our income tax recovery for the three months ended March 31, 2023, as compared to the same periods of 2022, was driven by an increase in accumulated losses that reduced our net deferred tax liability.

We record deferred income tax liabilities for some of our foreign operations in Canada and United Kingdom.

We have not yet been able to establish profitability or other sufficient significant positive evidence, to conclude that our deferred tax assets are more likely than not to be realized. Therefore, we continue to maintain a valuation allowance against our deferred tax assets.

LIQUIDITY AND CAPITAL RESOURCES

Liquidity risk is the risk that we will not meet our financial obligations as they become due after use of currently available cash. We have a planning and budgeting process to monitor operating cash requirements, including amounts projected for capital expenditures, which are adjusted as input variables change. These variables include, but are not limited to, our ability to generate revenue from current and prospective customers, general and administrative requirements and the availability of equity or debt capital and government funding. As these variables change, we may be required to issue equity or obtain debt financing.

On March 31, 2023, we had cash and cash equivalents of $6.5 million including $0.5 million in restricted cash compared to $11.8 million in cash and cash equivalents at December 31, 2022, including $1.7 million in restricted cash.

During the three months ended March 31, 2023, our principal sources of liquidity included $10.0 million of net proceeds obtained through the issuance of common stock under the At-the-Market Equity Offering Program, $1.0 million collection of notes receivable and $0.7 million proceeds from stock options exercise.

Our primary uses of liquidity included $6.6 million in salaries, $2.6 million changes in working capital, $2.4 million in professional fees and stock exchange fees, $1.8 million in travel, advertisement, insurance and other costs, $1.7 million in capital expenditures, $0.9 million in R&D materials and patents fees, and $0.7 million in rent and utilities.

On April 14, 2023, we entered into the Underwriting Agreement relating to our public offering of (i) 83,333,334 shares of our common stock, par value $0.001 and (ii) warrants to purchase up to an aggregate of 83,333,334 shares of our common stock. The shares of common stock and warrants were sold together as a fixed combination, consisting of one share of common stock and a warrant to purchase one share of common stock, but are immediately separable and will be issued separately in the offering. Each warrant is exercisable to purchase one share of common stock at a price of $0.375 per share, subject to certain adjustments in the case of a Share Combination Event or a Dilutive Issuance as described in more detail in Note 21, *Subsequent events*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q, and expires five years from the date of issuance. The combined price to the public in the offering for each share of common stock and accompanying warrant was $0.30. After deducting underwriting discounts and commissions and estimated offering expenses payable by us, the net proceeds were approximately $22.1 million. Pursuant to the terms of the Underwriting Agreement and subject to certain limitations and exceptions set forth therein, we agreed not to issue, sell or register equity securities of the Company (including pursuant to our At-the-Market Equity Offering Program, for a period of 60 days following the date of the Underwriting Agreement.

We expect we will require additional funding to continue as a going concern and are dependent on raising capital to expand the commercialization of our products, fund our operations and further our research and development activities and ultimately attain profitable operations. Future capital requirements may vary materially from period to period and will depend on many factors, including the timing and extent of spending on research and development efforts, the capital expansion of our facilities in Halifax, NS, Pleasanton, CA and Thurso, QC, and the ongoing investments to support the growth of our business.

Going Concern

In accordance with ASC 205-40, *Going Concern*, we evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about our ability to continue as a going concern within one year after the date that the condensed consolidated interim financial statements included in this Form 10-Q are issued. This evaluation initially does not take into consideration the potential mitigating effect of management’s plans that have not been fully implemented as of the date the condensed consolidated interim financial statements are issued. When substantial doubt exists under this methodology, management evaluates whether the mitigating effect of its plans sufficiently alleviates substantial doubt about our ability to continue as a going concern. The mitigating effect of management’s plans, however, is only considered if both (1) it is probable that the plans will be effectively implemented within one year after the date that the condensed consolidated interim financial statements are issued, and (2) it is probable that the plans, when implemented, will mitigate the relevant conditions or events that raise substantial doubt about the entity’s ability to continue as a going concern within one year after the date that the condensed consolidated interim financial statements are issued. In performing its analysis, management excluded certain elements of its operating plan that cannot be considered probable. Under ASC 205-40, the receipt of potential funding from future partnerships, equity or debt issuances, potential achievement of milestones from customer agreements and reductions in workforce cannot be considered probable at this time because these plans are not entirely within our control and/or have not been approved by our Board of Directors as of the date of issuance of the condensed consolidated interim financial statements.

Our expectation to generate operating losses and negative operating cash flows in the future and the need for additional funding to support our planned operations, raise substantial doubt regarding our ability to continue as a going concern. Management's plans to alleviate the conditions that raise substantial doubt include reduced spending, and the pursuit of additional capital. Management has concluded the likelihood that its plan to successfully obtain sufficient funding from one or more of these sources, or adequately reduce expenditures, while highly possible, is less than probable. Accordingly, we have concluded that substantial doubt exists about our ability to continue as a going concern for a period of at least twelve months from the date of issuance of the condensed consolidated interim financial statements. See Note 3, *Going Concern*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q for further information.

The accompanying condensed consolidated interim financial statements have been prepared on a going concern basis, which contemplates the realization of assets and satisfaction of liabilities in the ordinary course of business. The condensed consolidated interim financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of the uncertainties described above.

The following table summarizes our cash flows for the periods presented:

	Three months ended March 31, 2023	2022
Net cash used in operating activities	$ (15,520,162)	$ (18,745,199)
Net cash (used in) provided by investing activities	(437,528)	1,138,063
Net cash provided by financing activities	10,664,073	275,101
Net decrease in cash, cash equivalents and restricted cash	$ (5,293,617)	$ (17,332,035)

Net cash used in operating activities:

During the three months ended March 31, 2023, net cash used in operating activities of $15.5 million was primarily driven by a net loss of $18.7 million for the period, and non-cash adjustments of $5.9 million mainly due to depreciation and amortization of $3.2 million, stock-based compensation of $2.0 million, and credit loss expenses of $1.0 million. In addition, there was $2.7 million cash used by working capital primarily due to a $1.7 million decrease in trade payables as well as a $0.8 million increase in prepaid expenses and other current assets.

During the three months ended March 31, 2022, net cash used in operating activities of $18.7 million was primarily driven by $18.4 million of net loss reported for the period, and non-cash adjustments of $6.0 million mainly due to depreciation and amortization, stock-based compensation, and non-cash consulting expense. In addition, there was $6.3 million cash used by working capital primarily due to a $5.1 million decrease in trade and other payables, $0.8 million decrease in accounts and other receivable and $0.3 million decrease in prepaid expenses and other current assets.

Net cash (used in) provided by investing activities:

During the three months ended March 31, 2023, net cash used in investing activities of $0.4 million was primarily driven by $1.7 million of capital expenditure associated with the construction of the Highfield Park Facility in Nova Scotia, Canada as well as the Thurso facility expansion in Quebec, offset by $1.0 million proceeds from collection of notes receivable and $0.3 million proceeds from government loan.

During the three months ended March 31, 2022, net cash provided by investing activities of $1.1 million was primarily driven by proceeds from short-term investments, offset by $1.8 million purchases of property plant and equipment associated with the construction of the Highfield Park Facility in Canada as well as the equipment purchases for our facility in California, United States.

Net cash provided by financing activities:

During the three months ended March 31, 2023, net cash provided by financing activities of $10.7 million was primarily driven by the $10.0 net proceeds obtained through the issuance of common stock under the At-the-Market Equity Offering Program in addition to $0.7 million proceeds from stock options exercise.

During the three months ended March 31, 2022, net cash provided by financing activities of $0.3 million was primarily driven by proceeds from options and warrants conversion.

Commitments and contractual obligations

For a description of our commitments and contractual obligations, please see Note 20, *Commitments and contingencies*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q.

Off-Balance Sheet Arrangements

Off-balance sheet firm commitments relating to outstanding letters of credit amounted to approximately $0.5 million as of March 31, 2023 which is secured by a performance security guarantee cover issued by Export Development of Canada. Further, this guarantee/standby letter of credit expires on October 5, 2023. Please see Note 20, *Commitments and contingencies*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on this Form 10-Q. We do not maintain any other off-balance sheet arrangements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

This item is not required for a smaller reporting company.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic reports filed with the SEC is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC and that such information is accumulated and communicated to our management, including our Chief Executive Officer, Chief Financial Officer and Chief Operating Officer as appropriate, to allow for timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer, Chief Financial Officer and Chief Operating Officer has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of March 31, 2023.

Although management believes there has been significant improvement in the design and implementation of our internal controls over financial reporting during the first three months of 2023, we still consider there to be a material weakness in our internal control over financial reporting that has not yet been remediated. Accordingly, our management, with the participation of our Chief Executive Officer, Chief Financial Officer and Chief Operating Officer, concluded that our disclosure controls and procedures were not effective as of March 31, 2023.

Nevertheless, giving full consideration to the material weakness and the progress made in addressing them since December 31, 2022, we have concluded that the condensed consolidated interim financial statements included in this Quarterly Report on Form 10-Q present fairly, in all material respects, our financial position, the results of our operations and our cash flows for each of the periods presented in conformity with U.S. GAAP.

Remediation of Previously Reported Material Weakness

Management has implemented a number of measures to address the material weakness disclosed in the Form 10-K/A for the year ended December 31, 2022. We are currently in the process of testing our key controls with the assistance of a third-party firm, with the intention to continue to strengthen our internal controls over financial reporting to ensure that management can routinely prepare our financial statements under GAAP and remain in compliance with the SEC reporting requirements.

To remediate the weakness described above, we have performed the following:

- Hired qualified individuals in accounting and finance, including our Chief Financial Officer, those experienced in technical accounting and transactional accounting, allowing for proper segregation of duties and reporting structure.
- Hired a finance manager to perform detailed reviews to detect errors in a timely manner.
- Updated and formalized processes and procedures through the creation of multiple process documents including full-cycle flowcharts and a company-wide authorization matrix, which outlines limits of authority for key transactions and commitments. The formalization and documentation of these processes was done with the input of our third-party consultants, with whom we have performed walkthroughs and whom we continue to involve in the implementation of policies and procedures in new acquisitions.

To remediate the weakness described above, we are in process of implementing the following:

- Establishing and documenting accounting policies and procedures manual which clarifies the principles or rules that are used to determine decisions and actions, and the courses of action that must be followed to implement a policy consistently.
- Creating reporting tools such as a monthly reporting package which enables us to communicate financial information effectively and efficiently between parent and subsidiaries and ensures application of consistent accounting treatment across the different locations.

Changes in Internal Controls

Except for the remediation activities described above, there were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended March 31, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Internal Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that disclosure controls or internal controls, when effective, will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. In addition, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple errors or mistake.

Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management’s override of the control. The design of any systems of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving our stated goals under all potential future conditions. Over time, control may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of these inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. Individual persons may perform multiple tasks which normally would be allocated to separate persons and therefore extra diligence must be exercised during the period these tasks are combined.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we are subject to threats of litigation or actual litigation in the ordinary course of business, some of which may be material. Other than as disclosed in Note 20, *Commitments and contingencies*, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q, we are not currently a party to any pending legal proceedings that, if determined adversely to us, would, in our opinion, have a material effect on our financial position, results of operations, or cash flows or that would not be covered by our existing liability insurance. The results of any litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 1A. Risk Factors

The following factors could materially affect our business, financial condition or results of operations and should be carefully considered in evaluating us and our business, in addition to other information presented elsewhere in this report. Before you invest in our securities, you should be aware that our business faces numerous financial and market risks, including those described below, as well as general economic and business risks. The following discussion provides information concerning the material risks and uncertainties that we have identified and believe may adversely affect our business, our financial condition and our results of operations. Before you decide whether to invest in our securities, you should carefully consider these risk factors together with all of the other information included in this Quarterly Report on Form 10-Q, and in our other public filings, which could materially affect our business, financial condition or future results. Our risk factors are not guarantees that no such conditions exist as of the date of this report and should not be interpreted as an affirmative statement that such risks or conditions have not materialized, in whole or in part.

Risks Related to our Business

We expect to continue to incur losses from operations and negative cash flows, which raise substantial doubt about our ability to continue as a going concern.

We anticipate incurring additional losses until such time, if ever, we can achieve profitability. Substantial additional financing will be needed to fund our development, marketing and sales activities and generally to commercialize our technology. These factors raise substantial doubt about our ability to continue as a going concern.

We will seek to obtain additional capital through the issuance of debt or equity financings or other arrangements to fund operations; however, there can be no assurance we will be able to raise needed capital under acceptable terms, if at all. The sale of additional equity may dilute existing shareholders and newly issued shares may contain senior rights and preferences compared to currently outstanding shares of common stock. Issued debt securities may contain covenants and limit our ability to pay dividends or make other distributions to shareholders. If we are unable to obtain such additional financing, future operations would need to be scaled back or discontinued. Due to the uncertainty in our ability to raise capital, we believe that there is substantial doubt as to our ability to continue as a going concern.

We have a limited operating history, which can make it difficult for investors to evaluate our operations and prospects and may increase the risks associated with investing in us.

We have incurred recurring consolidated net losses since our inception and expects our operating costs to continue to increase in future periods as we expend substantial financial and other resources on, among other things, business and headcount expansion in operations, sales and marketing, research and development, and administration as a public company. These expenditures may not result in additional revenues or the growth of our business. If we fail to grow revenues or to achieve profitability while our operating costs increase, our business, financial condition, results of operations and growth prospects will be materially, adversely affected.

We are expected to be subject to many of the risks common to early-stage enterprises for the foreseeable future, including challenges related to laws, regulations, licensing, integrating and retaining qualified employees; making effective use of limited resources; achieving market acceptance of existing and future products; competing against companies with greater financial and technical resources; acquiring and retaining customers; and developing new solutions; and challenges relating to identified material weaknesses in internal control.

We have a history of net losses, and we expect to continue to incur losses for the foreseeable future. If we ever achieve profitability, we may not be able to sustain it.

We have incurred losses from operations since our inception and expect to continue to incur losses from operations for the foreseeable future. We have incurred net losses of $18.7 million and $79.1 million for the three months ended March 31, 2023 and the twelve months

ended December 31, 2022, respectively. As a result of these losses, as of March 31, 2023, we had an accumulated deficit of $226.2 million. We expect to continue to incur significant sales and marketing, research and development, regulatory and other expenses as we grow our business. In addition, we expect our general and administrative expenses to increase due to the additional costs associated with being a public company. The net losses that we incur may fluctuate significantly from period to period. We will need to generate significant additional revenue in order to achieve and sustain profitability. Even if we achieve profitability, we cannot be sure that we will remain profitable for any substantial period of time.

We will need additional financing to execute our business plan and fund operations, which additional financing may not be available on reasonable terms or at all.

We will need to raise additional capital to expand the commercialization of our products, fund our operations and further our research and development activities. We will pursue sources of additional capital through various financing transactions or arrangements, including the sale/leaseback of certain properties, joint venturing of projects, debt financing, equity financing, or other means. We may not be successful in identifying suitable financing transactions in the time period required or at all, and we may not obtain the capital we require by other means.

Our ability to obtain financing, if and when necessary, may be impaired by such factors as the capital markets and our limited operating history.

Any additional capital raised through the sale of equity may dilute the ownership percentage of our stockholders. Raising any such capital could also result in a decrease in the fair market value of our equity securities because our assets would be owned by a larger pool of outstanding equity. The terms of securities we issue in future capital transactions may be more favorable to our new investors, and may include preferences, superior voting rights and the issuance of other derivative securities, and issuances of incentive awards under equity employee incentive plans, which may have a further dilutive effect.

In addition, we may incur substantial costs in pursuing future capital financing, including investment banking fees, legal fees, accounting fees, securities law compliance fees, printing and distribution expenses and other costs. We may also be required to recognize non-cash expenses in connection with certain securities we may issue, which may adversely impact our financial condition.

Our operating results fluctuate significantly because of a number of factors, many of which are beyond our control.

Given the nature of the markets in which we participate, as well as macroeconomic uncertainties, we cannot reliably predict future revenues and profitability and unexpected changes may cause us to adjust our operations. Large portions of our costs are fixed, due in part to our significant sales, research and development and manufacturing costs. Thus, small declines in revenues could seriously negatively affect our operating results in any given quarter. Our operating results may fluctuate significantly from quarter-to-quarter and year-to-year. Some of the factors that may affect our quarterly and annual results are:

- changes in business and economic conditions, including a downturn in demand or decrease in the rate of growth in demand, whether in the global economy, a regional economy or the industries;
- changes in market conditions, potentially including changes in the credit markets, currency exchange rates, expectations for inflation or energy prices;
- the reduction, rescheduling or cancellation of orders by customers;
- fluctuations in timing and amount of customer orders;
- loss of key customers or employees;
- the availability of production capacity, whether internally or from external suppliers;
- competitive pressures on selling prices;
- strategic actions taken by our competitors;
- market acceptance of our products and the products of our customers;
- fluctuations in our manufacturing yields and significant yield losses;
- difficulties in forecasting demand for our products and the planning and managing of inventory levels;
- the availability of raw materials, supplies and manufacturing services from third parties;
- the amount and timing of investments in research and development;
- damage awards or injunctions as the result of litigation;

- changes in our product distribution channels and the timeliness of receipt of distributor resale information; and
- the impact of vacation schedules and holidays, largely during the second and third quarters of our fiscal year.

As a result of these factors, many of which are difficult to control or predict, we may experience materially adverse fluctuations in our future operating results on a quarterly or annual basis. Changes in demand for our products and in our customers' needs could have a variety of negative effects on our competitive position and our financial results, and, in certain cases, may reduce our revenues, increase our costs, lower our gross margin percentage or require us to recognize impairments of our assets.

If we are unable to maintain effective disclosure controls and procedures, our business, financial position and results of operations could be adversely affected

We are subject to the periodic reporting requirements of the Exchange Act. We designed our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Our management has concluded that a material weakness in our internal control over financial reporting exists at December 31, 2022. Management has further concluded that this material weakness resulted in our disclosure controls and procedures not being effective as of December 31, 2022. Please see Item 4 of Part I, *Controls and Procedures*, for more information about the material weakness that we identified.

We may be unable to develop new products, applications, and end markets for our products.

Our future success will depend in part on our ability to generate sales of our products as well as generating development revenue. Current and potential customers may have substantial investment in, and know-how related to our technologies. Customers may be reluctant to change from incumbent suppliers or cease using their own solutions, or our products may miss the design and procurement cycles of our customers. Many target markets have historically been slow to adopt new technologies. These markets often require long testing and qualification periods or lengthy government approval processes before admitting new suppliers or adopting new technologies. Introduction of new products and product enhancements will require that we effectively transfer production processes from research and development to manufacturing and coordinate efforts with those suppliers to achieve increased production volume rapidly. If we are unable to implement this strategy to develop new applications and end markets for products or develop new products, the business, financial condition, results of operations and growth prospects could be materially adversely affected. In addition, any newly developed or enhanced products may not achieve market acceptance or may be rendered obsolete or less competitive by the introduction of new products by other companies.

Our research and marketing development activities and investments may not result in profitable, commercially viable or successfully produced and marketed products.

Although we, ourselves and through our investments, are committed to researching and developing new markets and products and improving existing products, there can be no assurances that such research and market development activities will prove profitable or that the resulting markets and/or products, if any, will be commercially viable or successfully produced and marketed. A failure in the demand for products to materialize as a result of competition, technological change or other factors could have a material adverse effect on the business, results of operations and financial condition of the companies in which we have or will invest in, and consequently, on us.

Because our products typically have lengthy sales cycles, we may experience substantial delays between incurring expenses related to research and development and the generation of revenues.

The time from initiation of design to volume production of new meta material products often takes 18 months or longer. We first work with customers to achieve a design win, which may take 12 months or longer. Our customers then complete the design, testing and evaluation process and begin to ramp up production, a period that may last an additional nine months or longer. As a result, a significant period of time may elapse between our research and development efforts and our realization of revenues, if any, from volume purchasing of our products by our customers.

Disruption in supply from our single source supplier of our holographic raw materials may cause a material adverse effect on our Holography-related products.

We purchase our holographic raw materials from a tier 1 German manufacturer, which is a single source supplier. Disruption in supply from this supplier for any number of factors may cause a material adverse effect on our Holography-related products, which would negatively impact our financial condition and results of operations.

Fluctuations in the mix of products sold may adversely affect our financial results.

Changes in the mix and types of products sold may have a substantial impact on our revenues and gross profit margins. In addition, more recently introduced products tend to have higher associated costs because of initial overall development costs and higher start-up costs. Fluctuations in the mix and types of our products may also affect the extent to which we are able to recover our fixed costs and investments that are associated with a particular product or wafer foundry, and, as a result, can negatively impact our financial results.

Variations in the amount of time it takes for us to sell our systems may cause fluctuations in our operating results, which could cause our stock price to decline.

Variations in the length of our sales cycles could cause our revenues and cash flows, and consequently, our business, financial condition, operating results and cash flows, to fluctuate widely from period to period. This variation could cause our stock price to decline. Our customers generally take a long time to evaluate our inspection and/or film metrology systems and many people are involved in the evaluation process. We expend significant resources educating and providing information to our prospective customers regarding the uses and benefits of our systems in the semiconductor fabrication process. The length of time it takes for us to make a sale depends upon many factors including, but not limited to:

- the efforts of our sales force Premarketing clearance, approval, or certification;
- the complexity of the customer's fabrication processes;
- the internal technical capabilities and sophistication of the customer; and
- the customer's budgetary constraints.

Material weaknesses or significant deficiencies in our internal controls could materially and adversely affect our business, results of operations and financial condition.

Our management is responsible for establishing and maintaining effective internal control over financial reporting, as such term is defined in Securities Exchange Act Rule 13a-15(f). Our internal control over financial reporting is a process designed by and under the supervision of our management, including our Chief Executive Officer and Chief Financial Officer, and effected by our management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with U.S. generally accepted accounting principles. As previously disclosed, our management, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2022 and, based on this evaluation, concluded that internal control over financial reporting was not effective as of December 31, 2022, due to material weaknesses in internal control over financial reporting. As of March 31, 2023, such material weaknesses had not yet been fully remediated.

Remediation efforts place a significant burden on our management and add increased pressure on our financial reporting resources and processes (see "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part I, Item 2 of this Quarterly Report on Form 10-Q for more information regarding such remediation efforts). If we are unable to successfully remediate these material weaknesses in a timely manner, or if any additional material weaknesses in our internal control over disclosure or financial reporting are identified, the accuracy of our financial reporting and our ability to timely file with the SEC may be adversely impacted. In addition, if our remedial efforts are insufficient, or if additional material weaknesses or significant deficiencies in our internal controls occur in the future, we could be required to restate our financial statements, which could materially and adversely affect our business, results of operations and financial condition, restrict our ability to access the capital markets, require us to expend significant resources to correct the material weaknesses or deficiencies, subject us to regulatory investigations and penalties, harm our reputation, and cause a decline in investor confidence or otherwise cause a decline in our stock price.

Impairment of our goodwill or other intangible assets could materially and adversely affect our business, operating results, and financial condition.

Events or changes in circumstances, such as declines in our stock price or market capitalization, could increase the likelihood that we will be required to recognize an impairment charge against our goodwill and/or intangible assets. In particular, these or other adverse events or changes in circumstances may affect the estimated undiscounted future operating cash flows expected to be derived from our goodwill and intangible assets. We have recently experienced substantial declines in our stock price, and continued weakness or further declines in our stock price increase the likelihood that we may be required to recognize impairment charges. Any impairment charges could have a material adverse effect on our operating results and net asset value in the quarter in which we recognize the impairment charge. We cannot provide assurances that we will not in the future be required to recognize impairment charges. Please see Item 7 of Part II, Management's Discussion and Analysis of Financial Condition and Results of Operation – *Goodwill*, of the Form 10-K/A, for more information.

For example, a sustained decline in market capitalization below book value is an indicator that goodwill and other intangible assets should be tested for impairment under ASC 350 *Intangibles – Goodwill and Other.* As of December 31, 2022, the stock price of our common stock was $1.19, which indicated our market capitalization was higher than our carrying value of net assets. However, our stock price ranged between a high of $1.18 and a low of $0.41 during the period from January 1, 2023 to March 31, 2023, and as of March 31, 2023, our market capitalization was $157.3 million while the book value of our goodwill was $281.9 million. Based on the qualitative analysis we performed, we concluded the decline was not a sustained decline as there were no significant adverse events which could cause impairment of goodwill during the three months ended March 31, 2023 and it was too early to conclude that the decline was sustained in the light of high volatility of our stock price. However, we may be required to recognize an impairment loss in the future if the drop in our market capitalization is deemed to be sustained.

We depend on our OEM customers and system integrators to incorporate our products into their systems.

Our revenues depend, in part, on our ability to maintain existing and secure new OEM customers. Our revenues also depend, in part, on the ability of our current and potential OEM customers and system integrators to incorporate our products into their systems, and to sell such systems successfully. Limited marketing resources, reluctance to invest in research and development and other factors affecting these OEM customers and third-party system integrators could have a substantial impact upon demand for our products, and in turn upon our revenues and financial results. If OEM customers or integrators are not able to adapt existing tools or develop new systems to take advantage of the features and benefits of our products or if they perceive us to be an actual or potential competitor, then the opportunities to expand our revenues and increase our margins may be severely limited or delayed. In addition, some of our OEM customers are developing their own competitive products. If they are successful, this may reduce our revenues from these customers.

Our revenues may be concentrated in a few customers, and if we lose any of these customers, or these customers do not pay us, our revenues could be materially adversely affected.

We rely on a few customers for a significant portion of our revenues. For the three months ended March 31, 2023, revenue from one customer accounted for $1.3 million or 89% of total revenue.

We currently derive a significant portion of our revenue from contract services with a G10 central bank. Although we are developing a new security feature under a framework contract with this customer. There can be no assurance that this project will be successful, or that will result in long-term production revenue for this security feature.

The markets in which we participate are intensely competitive.

Many of our target markets are intensely competitive. Our ability to compete successfully in our target markets depends on the following factors:

- proper new product definition;
- product quality, reliability and performance;
- product features;
- price;
- timely delivery of products;
- technical support and service;
- design and introduction of new products;
- market acceptance of our products and those of our customers; and
- breadth of product line.

In addition, our competitors or customers may offer new products based on new technologies, industry standards, end-user or customer requirements, including products that have the potential to replace our products or provide lower cost or higher performance alternatives to our products. The introduction of new products by our competitors or customers could render our existing and future products obsolete or unmarketable.

Our agreements with various national governments and suppliers to such governments subject us to unique risks.

We must comply with, and are affected by, laws and regulations relating to the award, administration, and performance of various national government contracts. Awards received from such governments may be cancelled or lose funding. Such government contracting parties may require us to increase or decrease production of certain products sold to such governments due to changes in strategy, priorities or other reasons, which could impact production of other products or sales to other customers to meet the requirements of such

governments. In addition, such governments routinely retain rights to intellectual property developed in connection with government contracts. Such governments could exercise these rights in certain circumstances in the future, which could have the effect of decreasing the benefit we are able to realize commercially from such intellectual property.

National government agencies routinely audit and investigate government contractors and can decrease or withhold certain payments when it deems systems subject to its review to be inadequate. Additionally, any costs found to be misclassified may be subject to repayment. If an audit or investigation uncovers improper or illegal activities, we may be subject to civil or criminal penalties and administrative sanctions, including reductions of the value of contracts, contract modifications or terminations, forfeiture of profits, suspension of payments, penalties, fines and suspension, or prohibition from doing business with such governments. In addition, we could suffer serious reputational harm if allegations of impropriety were made against it. Any such imposition of penalties, or the loss of such government contracts, could materially adversely affect our business, financial condition, results of operations and growth prospects.

We are subject to the Foreign Corrupt Practices Act and similar anti-bribery and anti-corruption laws, as well as governmental export and import controls, all of which could subject us to liability or impair our ability to compete in international markets.

Our business activities may be subject to the U.S. Foreign Corrupt Practices Act (the FCPA), and similar anti-bribery or anti-corruption laws, regulations or rules of other countries in which we operate. These laws generally prohibit companies and their employees and third-party business partners, representatives and agents from engaging in corruption and bribery, including offering, promising, giving or authorizing the provision of anything of value, either directly or indirectly, to a government official or commercial party in order to influence official action, direct business to any person, gain any improper advantage, or obtain or retain business. The FCPA also requires public companies to make and keep books and records that accurately and fairly reflect the transactions of the corporation and to devise and maintain an adequate system of internal accounting controls. Our business is heavily regulated and therefore involves significant interaction with government officials, including potentially officials of non-U.S. governments.

In addition to our own employees, we may in the future leverage third parties to conduct our business abroad, such as obtaining government licenses and approvals. We and our third-party business partners, representatives and agents may have direct or indirect interactions with officials and employees of government agencies, state-owned or affiliated entities and we may be held liable for the corrupt or other illegal activities of our employees, our third-party business partners, representatives and agents, even if we do not explicitly authorize such activities. There is no certainty that our employees or the employees of our third-party business partners, representatives and agents will comply with all applicable laws and regulations, particularly given the high level of complexity of these laws. Violations of these laws and regulations could result in whistleblower complaints, adverse media coverage, investigations, loss of export privileges, debarment from U.S. government contracts, substantial diversion of management’s attention, significant legal fees and fines, severe criminal or civil sanctions against us, our officers, or our employees, disgorgement and other sanctions and remedial measures, and prohibitions on the conduct of our business. Any such violations could include prohibitions on our ability to offer our products in one or more countries and could materially damage our reputation, our brand, our international expansion efforts, our ability to attract and retain employees, and our business, prospects, operating results, financial condition and stock price.

The U.S. and various foreign governments have imposed controls, export license requirements and restrictions on the import or export of certain products, technologies, and software. We must export our products in compliance with U.S. export controls and we may not always be successful in obtaining necessary export licenses. Our failure to obtain required import or export approval for our products or limitations on our ability to export or sell our products imposed by these laws may harm our international and domestic revenues. Noncompliance with these laws could have negative consequences, including government investigations, penalties and reputational harm.

Changes in our products or changes in export, import and economic sanctions laws and regulations may delay our introduction of new products in international markets, prevent our customers from deploying our products internationally or, in some cases, prevent the export or import of our products to or from certain countries altogether. In addition to the tariffs imposed by the U.S. Government on certain items imported from China, it is possible that additional sanctions or restrictions may be imposed by the United States on items imported into the United States from China. Similarly, in addition to the tariffs imposed by China on certain items imported from the United States, it is possible that additional sanctions or restrictions may be imposed by China on items imported into China from the United States. Any such measures could further adversely affect our ability to sell our products to existing or potential customers and harm our ability to compete internationally and grow our business. In addition, generally, tariffs may materially increase the cost of our raw materials and finished goods, may negatively impact our margins as we may not be able to pass on the additional cost through increasing the prices of our products, and may cause the contraction of certain industries, including the Industrial market. Any change in export or import regulations or legislation, shift or change in enforcement, or change in the countries, persons or technologies targeted by these regulations, could result in decreased use of our products by, or in our decreased ability to export or sell our products to, existing or potential customers with international operations. In such an event, our business, financial condition, results of operations and growth prospects could be materially adversely affected.

We may experience delays in providing sufficient product for future testing of our products due to ongoing supply chain limitations.

Due to current supply chain disruptions, our contract manufacturing organizations may experience an inability to manufacture and produce sufficient quantities of our products as we progress through our regulatory testing and/or approval. Should this happen, we may not be able to provide sufficient quantities of our products which could delay our ability to bring products to market. Such a delay would cause us to use more capital than currently planned which may have a material adverse effect on our projected timing of product launches and financials.

Change in laws, regulations or guidelines relating to our business plan and activities could adversely affect our business.

Our current and proposed operations are subject to a variety of laws, regulations and guidelines relating to production, the conduct of operations, transportation, storage, health and safety, medical device regulation and the protection of the environment. These laws and regulations are broad in scope and subject to evolving interpretations, which could require us to incur substantial costs associated with compliance or alter certain aspects of our business plan. In addition, violations of these laws, or allegations of such violations, could disrupt certain aspects of our business plan and result in a material adverse effect on certain aspects of our planned operations.

As an example, we launched a new product metaAIR® in March 2019 to provide laser glare protection to pilots in the airline industry. Currently, metaAIR® is not subject to any Federal Aviation Administration regulations. However, metaAIR® has yet to receive FDA approval/clearance and could become subject to evolving regulation by governmental authorities as the metaAIR® market evolves further.

If we are unable to make acquisitions, or successfully integrate them into our business, our results of operations and financial condition could be adversely affected.

We have completed a number of acquisitions during our operating history. We have spent and may continue to spend significant resources identifying and pursuing future acquisition opportunities. Acquisitions involve numerous risks including:

- difficulties in integrating the operations, technologies and products of the acquired companies;
- the diversion of management's attention from other business concerns;
- the potential loss of key employees of the acquired companies.
- disruption of our ongoing business;
- the potential strain on our financial and managerial controls and reporting systems and procedures;
- unanticipated expenses and potential delays related to integration of an acquired business;
- the risk that we will be unable to develop or exploit acquired technologies;
- the challenges in achieving strategic objectives, cost savings and other benefits from acquisitions;
- the risk that our markets do not evolve as anticipated and that the technologies acquired do not prove to be those needed to be successful in those markets;
- the risks of entering new markets in which we have limited experience;
- difficulties in expanding our information technology systems or integrating disparate information technology systems to accommodate the acquired businesses;
- the challenges inherent in managing an increased number of employees and facilities and the need to implement appropriate policies, benefits and compliance programs;
- customer dissatisfaction or performance problems with an acquired company's products or personnel or with altered sales terms or a changed distribution channel;
- adverse effects on our relationships with suppliers;
- the reduction in financial stability associated with the incurrence of debt or the use of a substantial portion of our available cash;
- the costs associated with acquisitions, including amortization expenses related to intangible assets, and the integration of acquired operations;
- assumption of known or unknown liabilities or other unanticipated events or circumstances; and
- failure or fraud in pre-acquisition due diligence.

We cannot assure that we will be able to successfully acquire other businesses or product lines or integrate them into our operations without substantial expense, delay in implementation or other operational or financial problems. Failure to achieve the anticipated benefits of any prior and future acquisitions or to successfully integrate the operations of the acquired companies could have a material and adverse effect on our business, financial condition, and results of operations. Any future acquisitions could also result in potentially dilutive issuance of equity securities, acquisition or divestiture-related write-offs or the assumption of debt and contingent liabilities.

As a result of an acquisition, our financial results may differ from the investment community's expectations in a given quarter. Further, if one or more of the foregoing risks materialize or market conditions or other factors lead us to change our strategic direction, we may not realize the expected value from such transactions. If we do not realize the expected benefits or synergies of such transactions, our consolidated financial position, results of operations, cash flows or stock price could be negatively impacted.

The regulatory approval process for our medical products in the United States and other countries around the world is time-consuming and complicated, and we may not obtain the approval required to market a product within the timeline required, or at all. Additionally, we may lose regulatory approval and/or our products may become subject to new and unanticipated foreign regulations.

Our wireless sensing technologies to enhance MRI and glucoWISE® non-invasive glucose® monitoring are under research and development. We have performed many pre-clinical experiments and we are preparing to perform clinical experiments as needed to continue the development of the related products. These products have not yet entered the clinical phase, and we have not engaged with any regulatory authorities regarding any medical uses subject to regulatory approval processes. We can provide no assurance that any clinical trials we commence will be successful, or that we will be successful in obtaining any regulatory approvals for any medical products we may develop in the future.

Development of medical devices and related operations are subject to extensive government regulation and oversight both in the United States and abroad, and our failure to comply with applicable requirements could harm our business.

Any medical devices that we may develop in the future, and related operations, are subject to extensive regulation in the United States and elsewhere, including by the FDA and by the FDA's foreign counterparts. The FDA and foreign regulatory agencies regulate, among other things, with respect to medical devices: design, development, manufacturing, and release; laboratory, preclinical, and clinical testing; labeling, packaging, content, and language of instructions for use and storage; product safety and efficacy claims; establishment, registration, and device listing; marketing, sales, and distribution; pre-market clearances, approvals, and certifications; service operations; record keeping procedures; advertising and promotion; recalls and field safety corrective actions; post-market surveillance, including reporting of deaths or serious injuries and malfunctions that, if they were to recur, could lead to death or serious injury; post-market studies; and product import and export.

The regulations to which we are subject are complex and have tended to become more stringent over time. Regulatory changes could result in restrictions on our ability to carry on or expand our operations, higher than anticipated costs or lower than anticipated sales. The FDA and foreign counterparts enforce these regulatory requirements through, among other means, periodic unannounced inspections and periodic reviews of public marketing and promotion materials. We do not know whether we will be found compliant in connection with any future FDA or foreign counterparts' inspections or reviews. Failure to comply with applicable regulations could jeopardize our ability to sell our medical devices and result in enforcement actions such as: warning letters; untitled letters; fines; injunctions; civil penalties; termination of distribution; recalls or seizures of products; delays in the introduction of products into the market; total or partial suspension of production; refusal to grant future clearances, approvals, or certifications; withdrawals or suspensions of current approvals or certifications, resulting in prohibitions on sales of our medical devices; and in the most serious cases, criminal penalties.

Legislative or regulatory reforms in the United States or other countries may make it more difficult and costly for us to obtain regulatory clearances, approvals, or certifications for our products or to manufacture, market, or distribute our products after clearance, approval, or certification is obtained.

From time to time, legislation is drafted and introduced in Congress that could significantly change the statutory provisions governing the regulation of medical devices. In addition, the FDA may change its clearance and approval policies, adopt additional regulations, or revise existing regulations, or take other actions, which may prevent or delay approval or clearance of our future products under development or impact our ability to modify our currently cleared products on a timely basis. The FDA's and other regulatory authorities' policies may change, and additional government regulations may be promulgated that could prevent, limit, or delay regulatory clearance or approval of our product candidates. We cannot predict the likelihood, nature, or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

Healthcare policy changes, including recently enacted legislation reforming the U.S. healthcare system, could harm our business, financial condition, and results of operations.

In the United States, there have been, and continue to be, a number of legislative initiatives to contain healthcare costs. In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (ACA) was enacted in the United States, which made a number of substantial changes in the way healthcare is financed by both governmental and private insurers. We expect additional state and federal healthcare policies and reform measures to be adopted in the future. Any of these could make it more difficult and costly for us to obtain regulatory clearances or approvals for our products or to manufacture, market, or distribute our products after clearance or approval is obtained. Any such reforms could have a material adverse effect on our industry generally and on our customers. In addition, any healthcare reforms that expand the government's role in the U.S. healthcare industry may result in decreased sale of our products and lower reimbursement by payors for procedures using our products, any of which could affect demand for our products and/or result in additional pricing pressure, which in turn could impact our ability to successfully commercialize our products and could have an adverse material effect on our business, financial condition, and results of operations. Changes and reforms in the EU and other countries where we may decide to commercialize could have similar effects.

If coverage and reimbursement from third-party payors for procedures using our medical products, if authorized by a regulatory authority, significantly decline, physicians, hospitals, and other healthcare providers may be reluctant to use our products and our sales may decline.

In the United States, healthcare providers who purchase medical products generally rely on third-party payors, including Medicare, Medicaid, and private health insurance plans, to pay for all or a portion of the cost of the medical products that we may commercialize upon regulatory approval or clearance. Any decline in the amount payors are willing to reimburse our medical products, if cleared or approved for commercial use and distribution, may make it difficult for customers to adopt our products and could create additional pricing pressure for us. We may be unable to sell our products on a profitable basis if third-party payors deny coverage or reduce their current levels of reimbursement.

To contain costs of new technologies, governmental healthcare programs and third-party payors are increasingly scrutinizing new and existing treatments by requiring extensive evidence of favorable clinical outcomes. Physicians, hospitals, and other healthcare providers may not purchase our products if they do not receive satisfactory reimbursement from these third-party payors for the cost of using our products. If third-party payors issue non-coverage policies or if our customers are not reimbursed at adequate levels, this could adversely affect sales of our products. Outside of the United States, reimbursement systems vary significantly by country. The marketability of our products may suffer if government and commercial third-party payors fail to provide adequate coverage and reimbursement. Even if favorable coverage and reimbursement status is attained, less favorable coverage policies and reimbursement rates may be implemented in the future.

If we or our contractors fail to comply with healthcare and other governmental regulations, we could face substantial fines and penalties and our business, results of operations and financial condition could be adversely affected.

We are subject to certain federal, state, and foreign fraud and abuse laws, health information privacy and security laws, and transparency laws regarding payments and other transfers of value made to physicians and other healthcare professionals that could subject us to substantial penalties. Additionally, any challenge to, or investigation into, our practices under these laws could cause adverse publicity and be costly to respond to, and thus could harm our business. Our arrangements with physicians, hospitals and medical centers could expose us to broadly applicable fraud and abuse laws and other laws and regulations that may restrict the financial arrangements and relationships through which we may market, sell, and distribute our medical products after we receive the applicable marketing authorization. Our employees, consultants, and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements. Federal and state healthcare laws and regulations that may affect our ability to conduct business, include, without limitation:

- FDA, Department of Justice, and other government authority prohibitions against the advertisement, promotion, and labeling of our products for off-label uses, or uses outside the specific indications approved by the FDA;
- the federal Anti-Kickback Statute, which broadly prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving, or providing remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order, or recommendation of, any good or service for which payment may be made under federal healthcare programs, such as Medicare or Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation;
- the federal False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false claims, or knowingly using false statements, to obtain payment from the federal government. These laws have been interpreted to apply to arrangements between medical device manufacturers, on the one hand, and prescribers, purchasers, and other healthcare-related professionals on the other. They can apply to manufacturers who provide inaccurate information on coverage, coding, and reimbursement of their products to persons who bill third-party

payors. In addition, medical device companies have been prosecuted or faced civil and criminal liability under these laws for a variety of alleged promotional and marketing activities, including violations of the federal Anti-Kickback Statute and engaging in off-label promotion that caused claims to be submitted for non-covered off-label uses. Private individuals can bring False Claims Act "qui tam" actions, on behalf of the government and such individuals, commonly known as "whistleblowers," may share in amounts paid by the entity to the government in fines or settlement;

- HIPAA, which among other things, also created criminal liability for knowingly and willfully falsifying or concealing a material fact or making a materially false statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making, or causing to be made, false statements relating to healthcare matters;
- the federal Civil Monetary Penalties Law, which prohibits, among other things, offering or transferring remuneration to a federal healthcare beneficiary that a person knows or should know is likely to influence the beneficiary's decision to order or receive items or services reimbursable by the government from a particular provider or supplier;
- the FCPA and other local anti-corruption laws that apply to our international activities;
- the federal Physician Payment Sunshine Act (Open Payments) and its implementing regulations, which require applicable manufacturers of covered drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the Centers for Medicare & Medicaid Services (CMS) information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), non-physician healthcare professionals (such as physician assistants and nurse practitioners, among others) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;
- analogous state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers or patients; state laws that require medical device companies to comply with the industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require medical device manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm customers, state laws, governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts; and state laws related to insurance fraud in the case of claims involving private insurers.

The scope and enforcement of each of the laws applicable to our business and products are uncertain and subject to rapid change in the current environment of healthcare reform. The U.S. Department of Justice has increased its scrutiny of interactions between manufacturers and healthcare providers, which has led to a number of investigations, prosecutions, convictions, and settlements in the healthcare industry. Responding to a government investigation is time and resource intensive and may cause harm to our business and reputation even if we are able to successfully defend against it. Any action brought against us for violations of these laws or regulations, even successfully defended, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. We may be subject to private "qui tam" actions brought by individual whistleblowers on behalf of the federal or state governments.

If our operations are found to be in violation of any of the federal, state and foreign laws described above or any other current or future fraud and abuse or other healthcare laws and regulations that apply to us, we may be subject to penalties, including significant criminal, civil, and administrative penalties, damages, fines, imprisonment for individuals, exclusion from participation in government programs, such as Medicare and Medicaid, and we could be required to curtail or cease our operations. Any of the foregoing consequences could seriously harm our business and our financial results.

If we fail to obtain and maintain necessary regulatory clearances, approvals, or certifications for our products, or if clearances, approvals or certifications for future products and indications are delayed or not issued, our commercial operations would be harmed.

Our medical products are subject to extensive regulation by the FDA in the United States and by regulatory agencies in other countries outside of the United States. Government regulations specific to medical devices are wide ranging and govern, among other things:

- Product design, development, and manufacture.
- Laboratory, preclinical and clinical testing, labeling, packaging, storage, and distribution.

- Premarketing clearance, approval, or certification.
- Record keeping.
- Product marketing, promotion and advertising, sales, and distribution.
- Post marketing surveillance, including reporting of deaths or serious injuries and recalls and correction and removals.

Before a new medical device, or a new intended use for an existing product, can be marketed in the United States, a company must first submit and receive 510(k) clearance pursuant to Section 510(k) of the Food, Drug and Cosmetic Act (FDCA), approval of a PMA by the FDA, or grant of a de novo classification request from the FDA, unless an exemption applies.

In the 510(k) clearance process, the FDA must determine that a proposed device is "substantially equivalent" to a device legally on the market, known as a "predicate" device, in order to clear the proposed device for marketing. To be "substantially equivalent," the proposed device must have the same intended use as the predicate device, and either have the same technological characteristics as the predicate device or have different technological characteristics and not raise different questions of safety or effectiveness than the predicate device. Clinical data is sometimes required to support substantial equivalence. In the PMA approval process, the FDA must determine that a proposed device is safe and effective for its intended use based on extensive data, including technical, pre-clinical, clinical trial, manufacturing, and labeling data. The PMA process is typically required for devices for which the 510(k) process cannot be used and that are deemed to pose the greatest risk, such as life sustaining, life supporting, or implantable devices. In the de novo classification process, a manufacturer whose novel device under the FDCA would otherwise be automatically classified as Class III and require the submission and approval of a PMA prior to marketing is able to request down-classification of the device to Class I or Class II on the basis that the device presents a low or moderate risk. If the FDA grants the de novo classification request, the applicant will receive authorization to market the device. This device type may be used subsequently as a predicate device for future 510(k) submissions. Modifications to products that are approved through a PMA application generally need prior FDA approval of a PMA supplement. Similarly, some modifications made to products cleared through a 510(k) submission may require a new 510(k) clearance, or such modification may put the device into Class III and require PMA approval or the grant of a de novo classification request.

The PMA approval, 510(k) clearance, and de novo classification processes can be expensive, lengthy, and uncertain. Any delay or failure to obtain necessary regulatory approvals, clearances or certifications would have a material adverse effect on our business, financial condition, and results of operations.

The FDA and foreign bodies can delay, limit, or deny clearance, approval, or certification of a device for many reasons, including:

- our inability to demonstrate to the satisfaction of the FDA or the applicable regulatory entity or notified body that our products are safe or effective for their intended uses or substantially equivalent to a predicate device;
- the disagreement of the FDA or the applicable foreign body with the design, conduct or implementation of our clinical trials or investigations or the analyses or interpretation of data from pre-clinical studies or clinical trials or investigations;
- serious and unexpected adverse device effects experienced by participants in our clinical trials or investigations;
- the data from our pre-clinical studies and clinical trials or investigations may be insufficient to support clearance, de novo classification, approval, or certification, where required;
- our inability to demonstrate that the clinical and other benefits of the device outweigh the risks;
- the applicable regulatory authority or notified body may identify significant deficiencies in our manufacturing processes, facilities, or analytical methods or those of our third-party contract manufacturers;
- the potential for approval policies or regulations of the FDA or applicable foreign regulatory bodies to change significantly in a manner rendering our clinical data or regulatory submissions insufficient for clearance, de novo classification, approval, or certification; and
- the FDA or foreign regulatory authorities or bodies may audit our clinical trial or investigation data and conclude that the data is not sufficiently reliable to support approval, clearance, or certification.

Upon commercialization of any medical devices for which we receive FDA clearance or approval, we are required to investigate all product complaints we receive, and timely file reports with the FDA, including MDRs that require that we report to regulatory authorities if our products may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction were to recur. If these reports are not submitted in a timely manner, regulators may impose sanctions and we may be subject to product liability or regulatory enforcement actions, including warning letters, untitled letters, fines, civil penalties, recalls, seizures, operating restrictions, denial of requests for 510(k) clearance or premarket approval of new products, new intended uses or modifications to existing products, withdrawal of current 510(k) clearances or premarket approvals, and narrowing of approved or cleared product labeling, all of which could harm our business. In addition, the FDA may provide notice of and conduct

additional inspections, such as “for cause” inspections, of our business, sites, and facilities as part of its review process. Similar requirements may apply in foreign countries.

If we initiate a correction or removal action for our products to reduce a significant risk to health posed by our products, we would be required to submit a publicly available correction and removal report to the FDA and, in many cases, similar reports to other regulatory agencies. This report could be classified by the FDA as a device recall which could lead to increased scrutiny from the FDA, other international regulatory agencies, and our customers regarding the quality and safety of our products. Furthermore, the submission of these reports could be used by competitors against us and cause physicians to delay or cancel orders, which could harm our reputation.

The FDA and the Federal Trade Commission (FTC) also regulate the advertising, promotion, and labeling of our products to ensure that the claims we make are consistent with our regulatory authorizations, that there is adequate and reasonable scientific data to substantiate the claims, and that our promotional labeling and advertising is neither false nor misleading in any respect. If the FDA or FTC determines that any of our advertising or promotional claims are misleading, not substantiated, or not permissible, we may be subject to enforcement actions, including adverse publicity and/or warning letters, and we may be required to revise our promotional claims and make other corrections or restitutions.

The FDA, state authorities, and foreign counterparts have broad investigation and enforcement powers. Our failure to comply with applicable regulatory requirements could result in enforcement action by the FDA, state agencies, or foreign counterparts, which may include any of the following sanctions:

- adverse publicity, warning letters, fines, injunctions, consent decrees, and civil penalties;
- repair, replacement, refunds, recalls, termination of distribution, administrative detention, or seizure of our products;
- operating restrictions, partial suspension, or total shutdown of production; lawsuit
- denial of our requests for marketing authorizations or certifications for new products, new intended uses, or modifications to existing products;
- withdrawal of marketing authorizations or certifications that have already been granted; and
- criminal prosecution.

If any of these events were to occur, our business and financial condition could be harmed. In addition, the FDA’s and other regulatory authorities’ policies may change and additional government regulations may be enacted that could prevent, limit, or delay regulatory approval of our products. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval or certification that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business, financial condition, and results of operations.

Semiconductors included as components in consumer products have shorter product life cycles than other types of products sold by our customers.

We believe that components are subject to shorter product life cycles, because of technological change, consumer preferences, trendiness and other factors, than other types of products sold by our customers. Shorter product life cycles result in more frequent design competitions for the inclusion of semiconductors in next generation consumer products, which may not result in design wins for us. Shorter product life cycles may lead to more frequent circumstances where sales of existing products are reduced or ended.

We may not be able to increase production capacity to meet the present and future demand for our products.

The semiconductor industry has been characterized by periodic limitations on production capacity. These limitations may result in longer lead times for product delivery than desired by many of our customers. If we are unable to increase our production capacity to meet future demand, some of our customers may seek other sources of supply, our future growth may be limited or our results of operations may be adversely affected.

Our gross margin is dependent on a number of factors, including our level of capacity utilization.

Semiconductor manufacturing requires significant capital investment, leading to high fixed costs, including depreciation expense. We are limited in our ability to reduce fixed costs quickly in response to any shortfall in revenues. If we are unable to utilize our manufacturing, assembly and testing facilities at a high level, the fixed costs associated with these facilities will not be fully absorbed, resulting in lower gross margins. Increased competition and other factors may lead to price erosion, lower revenues and lower gross margins for us in the future.

Our success depends on our ability to manufacture our products efficiently.

We manufacture our products in facilities that are owned and operated by us, as well as in external wafer foundries and subcontract assembly facilities. For various reasons, such as contaminations in the manufacturing environment, defects in the masks used in the facilities and manufacturing equipment failures, we could experience a decrease in manufacturing yields. Additionally, if we increase our manufacturing output, the additional demands placed on existing equipment and personnel or the addition of new equipment or personnel may lead to a decrease in manufacturing yields. As a result, we may not be able to cost-effectively expand our production capacity in a timely manner.

Increasing raw material prices could impact our profitability.

From time to time, we have experienced price increases for many of raw materials. If we are unable to pass price increases for raw materials onto our customers, our gross margins and profitability could be adversely affected.

Our revenues are dependent upon our products being designed into our customers' products.

Some of our products are incorporated into customers' products or systems at the design stage. The value of any design win largely depends upon the customer's decision to manufacture the designed product in production quantities, the commercial success of the customer's product and the extent to which the design of the customer's products also accommodates incorporation of components manufactured by our competitors. In addition, our customers could subsequently redesign their products or systems so that they no longer require our products. The development of the next generation of products by our customers generally results in new design competitions for semiconductors, which may not result in design wins for us, potentially leading to reduced revenues and profitability. We may not achieve design wins or our design wins may not result in future revenues.

We rely on our distributors and sales representatives to sell some of our products.

Our distributors and sales representatives could reduce or discontinue sales of our products. They may not devote the resources necessary to sell our products in the volumes and within the time frames that we expect. In addition, we depend upon the continued viability and financial resources of these distributors and sales representatives, some of which are small organizations with limited working capital. These distributors and sales representatives, in turn, depend substantially on general economic conditions and conditions within the semiconductor industry. We believe that our success will continue to depend upon these distributors and sales representatives. Foreign distributors are typically granted longer payment terms, resulting in higher accounts receivable balances for a given level of sales than domestic distributors. Our risk of loss from the financial insolvency of distributors is, therefore, disproportionally weighted to foreign distributors. If any significant distributor or sales representative experiences financial difficulties, or otherwise becomes unable or unwilling to promote and sell our products, our business could be harmed.

Costs related to product defects and errata may harm our results of operations and business.

Costs associated with unexpected product defects and errata (deviations from published specifications) due to, for example, unanticipated problems in our manufacturing processes, include the costs of:

- writing off the value of inventory of defective products;
- disposing of defective products;
- recalling defective products that have been shipped to customers;
- providing product replacements for, or modifications to, defective products; and/or
- defending against litigation related to defective products.

These costs could be substantial and may, therefore, increase our expenses and lower our gross margin. In addition, our reputation with our customers or users of our products could be damaged as a result of such product defects and errata, and the demand for our products could be reduced. These factors could harm our financial results and the prospects for our business.

We order materials and commence production in advance of anticipated customer demand. Therefore, revenue shortfalls may also result in inventory write-downs.

We typically plan our production and inventory levels based on our own expectations for customer demand. Actual customer demand, however, can be highly unpredictable and can fluctuate significantly. In response to anticipated long lead times to obtain inventory and materials, we order materials and production in advance of customer demand. This advance ordering and production may result in excess inventory levels or unanticipated inventory write-downs if expected orders fail to materialize.

Our international operations expose us to material risks.

For the three months ended March 31, 2023, almost all of our consolidated revenue was generated were in countries outside of the United States. We expect net revenues from foreign markets to continue to represent a significant portion of total net revenues. We maintain significant business operations in Canada. Some of the risks inherent in doing business internationally are:

- foreign currency fluctuations, particularly in Canadian Dollar;
- longer payment cycles;
- challenges in collecting accounts receivable;
- changes in the laws, regulations or policies of the countries in which we manufacture or sell our products;
- trade restrictions, tariffs, customs, sanctions, embargoes and other barriers to importing/exporting materials and products in a cost effective and timely manner, or changes in applicable tariffs or custom rules;
- cultural and language differences;
- employment regulations;
- limited infrastructure in emerging markets;
- transportation delays;
- work stoppages;
- labor and union disputes;
- electrical outages;
- terrorist attack or war; and
- economic or political instability.

Our financial performance is dependent on economic stability and credit availability in international markets. Actions by governments to address deficits or sovereign or bank debt issues, particularly in Europe, could adversely affect gross domestic product or currency exchange rates in countries where we operate, which in turn could adversely affect our financial results. If our customers or suppliers are unable to obtain the credit necessary to fund their operations, we could experience increased bad debts, reduced product orders and interruptions in supplier deliveries leading to delays or stoppages in our production. Alternatively, governmental actions in China or other emerging markets to address economic problems, such as inflation, asset or other "bubbles" or the transfer of capital out of the country, could also adversely affect gross domestic product or the growth thereof and result in reduced product orders or increased bad debt expense for us. In addition, the laws and courts of certain foreign countries may not protect our products or intellectual property rights to the same extent as do U.S. laws and courts. Therefore, the risk of piracy of our technology and products may be greater when we manufacture or sell our products in certain foreign countries.

Business interruptions may damage our facilities or those of our suppliers.

Our operations and those of our suppliers are vulnerable to interruption by fire, earthquake, flood and other natural disasters, as well as power loss, telecommunications failure and other events beyond our control. We do not have a detailed disaster recovery plan and our backup power sources have only a limited amount of time for the support of critical systems. Some of our facilities are located near major earthquake fault lines and have experienced earthquakes in the past. If a natural disaster occurs, our ability to conduct our operations could be seriously impaired, which could harm our business, financial condition and results of operations and cash flows. We cannot be sure that the insurance we maintain against general business interruptions will be adequate to cover all our losses.

We are exposed to risks that our employees, consultants, or other commercial partners and business associates may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements.

We are exposed to the risk that our employees, consultants, and other commercial partners and business associates may engage in fraudulent or illegal activity. Misconduct by these parties could include intentional, reckless, or negligent conduct or other unauthorized activities that violate the regulations of the FDA and other regulators (both domestic and foreign), including those laws requiring the reporting of true, complete, and accurate information to such regulators, manufacturing standards, healthcare fraud and abuse laws, and regulations in the United States and internationally or laws that require the true, complete, and accurate reporting of financial information or data. In particular, sales, marketing, and business arrangements in the healthcare industry, including the sale of medical devices, are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing, and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs, and other business arrangements. It is not always possible to identify and deter misconduct by our

employees, consultants, and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us and we are not successful in defending ourselves or asserting our rights, those actions could result in the imposition of significant fines or other sanctions, including the imposition of civil, criminal, and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid, and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of operations, any of which could adversely affect our business, financial condition and results of operations. Whether or not we are successful in defending against such actions or investigations, we could incur substantial costs, including legal fees and reputational harm, and divert the attention of management in defending ourselves against any of these claims or investigations.

Compliance with environmental laws and regulations could be expensive, and failure to comply with these laws and regulations could subject us to significant liability.

Our research and development and manufacturing operations involve the use of some hazardous substances and are subject to a variety of federal, state, local, and foreign environmental laws and regulations relating to the storage, use, discharge, disposal, remediation of, and human exposure to, hazardous substances and the sale, labeling, collection, recycling, treatment, and disposal of products containing hazardous substances. Liability under environmental laws and regulations can be joint and several and without regard to fault or negligence. Compliance with environmental laws and regulations may be expensive and noncompliance could result in substantial liabilities, fines and penalties, personal injury and third-party property damage claims and substantial investigation and remediation costs. Environmental laws and regulations could become more stringent over time, imposing greater compliance costs, and increasing risks and penalties associated with violations. We cannot assure you that violations of these laws and regulations will not occur in the future or have not occurred in the past as a result of human error, accidents, equipment failure or other causes. The expense associated with environmental regulation and remediation could harm our financial condition and operating results.

Our insurance coverage strategy may not be adequate to protect us from all business risks.

We will require insurance coverage for numerous risks related to our business. Although our management believes that the events and amounts of liability covered by our insurance policies will be reasonable, taking into account the risks relevant to our business, and the fact that agreements with users contain limitations of liability, there can be no assurance that such coverage will be available or sufficient to cover claims to which we may become subject. If insurance coverage is unavailable or insufficient to cover any such claims, our financial resources, results of operations and prospects could be adversely affected.

The risk of loss of our intellectual property, trade secrets or other sensitive business or customer confidential information or disruption of operations due to cyberattacks or data breaches could negatively impact our financial results.

Cyberattacks or data breaches could compromise confidential, business-critical information, cause disruptions in our operations, expose us to potential litigation, or harm our reputation. We have important assets, including intellectual property, trade secrets, and other sensitive, business-critical and/or confidential information which may be vulnerable to such incidents. While we are in the process of implementing a cybersecurity program that is continually reviewed, maintained, and upgraded, no assurance can be made that we are invulnerable to cyberattacks and data breaches which, if significant, could negatively impact our business and financial results.

Cybersecurity breaches and information technology failures could harm our business by increasing our costs and negatively impacting our business operations.

We rely extensively on information technology systems, including internet sites, computer software, data hosting facilities and other hardware and platforms, some of which are hosted by third parties, to assist in conducting our business. Our information technology systems, as well as those of third parties we use in our business operations, may be vulnerable to a variety of evolving cybersecurity risks, such as those involving unauthorized access or control, malicious software, data privacy breaches by employees or others with authorized access, cyber or phishing-attacks, ransomware and other security issues. Moreover, cybersecurity threat actors, whether internal or external, are becoming more sophisticated and coordinated in their attempts to access companies' information technology systems and data, including the information technology systems of cloud providers and other third parties with whom we conduct our business.

The costs to us to eliminate or alleviate cyber or other security problems, bugs, viruses, worms, malicious software programs and security vulnerabilities could be significant, and our efforts to address these problems may not be successful and could result in interruptions, delays, cessation of service and loss of existing or potential customers that may impede our sales, manufacturing, distribution or other critical functions.

We manage and store proprietary information and sensitive or confidential data relating to our business and the businesses of third parties. Breaches of our security measures or the accidental loss, inadvertent disclosure or unapproved dissemination of proprietary information or sensitive or confidential data about us or our partners or customers, including the potential loss or disclosure of such

information or data as a result of fraud, trickery or other forms of deception, could expose us, our partners and customers to a risk of loss or misuse of this information; result in regulatory investigations, fines, litigation and potential liability for us; damage our brand and reputation; or otherwise harm our business. In addition, the cost and operational consequences of implementing further data protection measures could be significant. Delayed sales, lower margins or lost customers resulting from these disruptions could adversely affect our financial results, stock price and reputation.

Changes in laws or regulations relating to privacy, information security and data protection, or any actual or perceived failure by us to comply with such laws and regulations or any other obligations, could adversely affect our business.

Personal privacy, information security and data protection are significant issues worldwide. The regulatory framework governing the collection, use, and other processing of personal data and other information is rapidly evolving. The United States federal and various state and foreign governments have adopted or proposed requirements regarding the collection, distribution, use, security and storage of personally identifiable information and other data relating to individuals, and federal and state consumer protection laws are being applied to enforce regulations related to the online collection, use and dissemination of data.

The costs of compliance with and other burdens imposed by laws, regulations, standards and other actual or asserted obligations relating to privacy, data protection and information security may be substantial, and they may require us to modify our data processing practices and policies. Any actual or alleged noncompliance with any of these laws, regulations, standards, and other actual or asserted obligations may lead to claims and proceedings by governmental actors and private parties, and significant fines, penalties or liabilities.

We are subject to taxation-related risks in multiple jurisdictions, and the adoption and interpretation of new tax legislation, tax regulations, tax rulings, or exposure to additional tax liabilities could materially affect our business, financial condition and results of operations.

We are a U.S. parented multinational group subject to income and other taxes in Canada, the United States, the United Kingdom, and other jurisdictions in which we do business. As a result, our provision for (benefit from) income taxes is derived from a combination of applicable tax rates in the various jurisdictions in which we operate. Significant judgment is required in determining our global provision for (benefit from) income taxes, value added and other similar taxes, deferred tax assets or liabilities and in evaluating our tax positions on a worldwide basis. It is possible that our tax positions may be challenged by tax authorities, which may have a significant impact on our global provision for (benefit from) income taxes. If such a challenge were to be resolved in a manner adverse to us, it could have a material adverse effect on our business, financial condition and results of operations.

Recent or future changes to U.S., Canadian, United Kingdom and other non-U.S. tax laws could impact the tax treatment of our earnings. For example, the Inflation Reduction Act of 2022, enacted on August 16, 2022, imposes a one-percent non-deductible excise tax on repurchases of stock that are made by U.S. publicly traded corporations on or after January 1, 2023. In addition, as of January 1, 2022, the Tax Cuts and Jobs Act of 2017 requires research and experimental expenditures attributable to research conducted within the United States to be capitalized and amortized ratably over a five-year period. Any such expenditures attributable to research conducted outside the United States must be capitalized and amortized over a 15-year period. We generally conduct our international operations through wholly owned subsidiaries and report our taxable income in various jurisdictions worldwide based upon our business operations in those jurisdictions. The intercompany relationships between our legal entities are subject to complex transfer pricing regulations administered by taxing authorities in various jurisdictions. Although we believe we are compliant with applicable transfer pricing and other tax laws in the United States, Canada, the United Kingdom and other relevant countries, due to changes in such laws and rules, we may have to modify our international structure in the future, which will incur costs and may adversely affect our business, financial condition and results of operations.

If U.S., Canadian, United Kingdom or other non-U.S. tax laws change further, if our current or future structures and arrangements are challenged by a taxing authority, or if we are unable to appropriately adapt the manner in which we operate our business, we may have to undertake further costly modifications to our international structure, which may cause our tax liabilities to increase and adversely affect our business, financial condition and results of operations.

Our ability to use our deferred tax assets to offset future taxable income is subject to certain limitations, which may have a material impact on our business, financial condition or results of operations.

As of March 31, 2023, a valuation allowance has been recorded against our deferred tax assets that are more likely than not to be realized in the U.S. federal and state tax jurisdictions. We assess the available positive and negative evidence to estimate if sufficient future taxable income will be generated to utilize the existing deferred tax assets. Certain of our deferred tax assets may expire unutilized or underutilized, which could prevent us from offsetting future taxable income. We continue to assess the realizability of our deferred tax assets in the future. Future adjustments in our valuation allowance may be required, which may have a material impact on our quarterly and annual operating results.

Risks Related to Intellectual Property

If we fail to protect and enforce our intellectual property rights and our confidential information, our business could be adversely affected.

We rely on a combination of nondisclosure agreements and other contractual provisions and patent, trade secret and copyright laws to protect our technologies, products, product development and manufacturing activities from unauthorized use by third parties. Our patents do not cover all of our technologies, systems, products and product components and our competitors or others may design around our patented technologies. We cannot guarantee that these mechanisms will adequately protect our technology and intellectual property, nor can we guarantee that a court will enforce our intellectual property rights.

In addition, the laws and enforcement regimes of certain countries do not protect our technology and intellectual property to the same extent as do the laws and enforcement regimes of the U.S. In certain jurisdictions, we may be unable to protect our technology and intellectual property adequately against unauthorized use, which could adversely affect our business.

Our intellectual property revenues are uncertain and unpredictable in timing and amount.

We are unable to discern a pattern in or otherwise predict the amount of any payments for the sale or licensing of intellectual property that we may receive. Consequently, we are unable to plan on the timing of intellectual property revenues and our results of operations may be adversely affected by a reduction in future estimated intellectual property revenues.

We may become involved in material legal proceedings in the future to enforce or protect our intellectual property rights, which could harm our business.

From time to time, we may identify products that we believe infringes on our patents and may have to initiate litigation to enforce our patent rights against those products. Litigation stemming from such disputes could harm our ability to gain new customers, who may postpone licensing decisions pending the outcome of the litigation or who may, as a result of such litigation, choose not to adopt our technologies. Such litigation may also harm our business relationships with existing customers, who may, because of such litigation, cease making royalty or other payments to us or challenge the validity and enforceability of our patents or the scope of our related agreements.

In addition, the costs associated with legal proceedings are typically high, relatively unpredictable and not completely within our control. These costs may be materially higher than expected, which could adversely impair our working capital, affect our operating results and lead to volatility in the price of our common stock. Whether or not determined in our favor or ultimately settled, litigation would divert managerial, technical, legal and financial resources from our business operations. Furthermore, an adverse decision in any of these legal actions could result in a loss of our proprietary rights, subject us to significant liabilities, require us to seek licenses from others, limit the value of our technology or otherwise negatively impact the price of our common stock, business and financial position, results of operations and cash flows.

Even if we prevail in a legal action, significant contingencies may exist to the settlement and final resolution, including the scope of the liability of each party, our ability to enforce judgments against the parties, the ability and willingness of the parties to make any payments owed or agreed upon, and the dismissal of the legal action by the relevant court, none of which are completely within our control. Parties that may have financial obligations to us could be insolvent or decide to alter their business activities or corporate structure, which could affect our ability to collect royalties from such parties.

Our technologies may infringe on the intellectual property rights of others, which could lead to costly disputes or disruptions.

Various business segments in which we operate are characterized by frequent allegations of intellectual property infringement. Any allegation of infringement could be time consuming and expensive to defend or resolve, result in substantial diversion of management resources, cause suspension of operations or force us to enter into royalty, license, or other agreements rather than dispute the merits of such allegation. Furthermore, third parties making such claims may be able to obtain injunctive or other equitable relief that could block our ability to further develop or commercialize some or all of our technologies, and the ability of our customers to develop or commercialize their products incorporating our technologies, in the U.S. and abroad. If patent holders or other holders of intellectual property initiate legal proceedings, we may be forced into protracted and costly litigation. We may not be successful in defending such litigation and may not be able to procure any required royalty or license agreements on acceptable terms or at all.

Risk Related to Industry Adoption of our Products

We cannot provide assurance that markets will accept our various products at the expected market penetration rates, which may adversely affect our business operations and financial position.

We launched our first product, a laser glare protection eyewear named metaAIR®, in March 2019, with a primary focus on the aviation market. We have co-developed this product with Airbus through a strategic partnership. Airbus further extended its support by introducing us to Satair, an Airbus-owned company, which became the global distribution partner for metaAIR® to the aviation market. Since 2016, Airbus and Satair have invested a total of $2,000,000 for the product development and exclusive distribution rights to metaAIR®.

Despite our close collaboration with the Airbus Group and future plans for marketing and sales expansion, there can be no assurance that the aviation market will accept the metaAIR® product at the expected market penetration rates and a slower than forecasted market acceptance may have a material adverse effect on Holography laser glare protection related products and our financial position.

Slower than forecasted market acceptance of Lithography related products, partially in the automotive market, may have a material adverse effect on our financial position.

Our NANOWEB® applications have not yet reached the required manufacturing scale to enable us to address the volume demands of a number of our target vertical markets. We currently have only our first pilot scale, 300mm wide, roll-to-roll line, and we will need to add additional capacity and wider substrates to support our target applications. Broader sales and production are expected to be launched in two to three years' time after successful completion of automotive and other vertical market product qualification and product introductions. We believe that the automotive market is a strategic high growth opportunity; however, despite our close collaboration with automotive partners, there can be no assurance that the automotive market will accept the NANOWEB® product at the expected market penetration rates and a slower than forecasted market acceptance may have a material adverse effect on Lithography de-icing/de-fogging, transparent antenna and other related products and our financial position.

If products incorporating our technologies are used in defective products, we may be subject to product liability or other claims.

If our technology is used in defective or malfunctioning products, we could be sued for damages, especially if the defect or malfunction causes physical harm to people. While we will endeavor to carry product liability insurance, contractually limit our liability and obtain indemnities from our customers, there can be no assurance that we will be able to obtain insurance at satisfactory rates or in adequate amounts or that any insurance and customer indemnities will be adequate to defend against or satisfy any claims made against us. The costs associated with legal proceedings are typically high, relatively unpredictable and not completely within our control. Even if we consider any such claim to be without merit, significant contingencies may exist, similar to those summarized in the above risk factor concerning intellectual property litigation, which could lead us to settle the claim rather than incur the cost of defense and the possibility of an adverse judgment. Product liability claims in the future, regardless of their ultimate outcome, could have a material adverse effect on our business, financial condition and reputation, and on our ability to attract and retain customers.

We participate in markets that are subject to rapid technological change and require significant research and development expenses to develop and maintain products that can achieve market acceptance.

The markets for our products are characterized by:

- changing technologies;
- changing customer needs;
- frequent new product introductions and enhancements;
- increased integration with other functions; and
- product obsolescence.

We operate in a rapidly evolving industry subject to significant technological change and new product introductions and enhancements. Our future performance depends in part on the successful development, introduction and market acceptance of new and enhanced products that address these changes and current and potential customer requirements. To the extent customers defer or cancel orders for existing products due to a slowdown in demand or in the expectation of a new product release, or if there is any delay in development or introduction of our new products or enhancements of our products, our business and financial conditions, results of operations, and

growth prospects would be materially adversely affected. We also may not be able to develop the underlying core technologies necessary to create new products and enhancements, or to license these technologies from third parties.

Risks Related to Facilities and Human Resources

We have ongoing environmental costs, which could have a material adverse effect on our financial position or results of operations.

Certain of our operations and assets are subject to extensive environmental, health and safety regulations, including laws and regulations related to waste disposal and remediation of contaminated sites. The nature of our operations and products, including the raw materials we handle, exposes us to the risk of liabilities, obligations or claims under these laws and regulations due to the production, storage, use, transportation and sale of materials that can adversely impact the environment or cause personal injury, including, in the case of chemicals, unintentional releases into the environment. Environmental laws may have a significant effect on the costs of use, transportation and storage of raw materials and finished products, as well as the costs of storage, transportation and disposal of wastes.

The ultimate costs and timing of environmental liabilities are difficult to predict. Liabilities under environmental laws relating to contaminated sites can be imposed retroactively and on a joint and several basis. One liable party could be held responsible for all costs at a site, regardless of fault, percentage of contribution to the site or the legality of the original disposal. We could incur significant costs, including clean-up costs, natural resource damages, civil or criminal fines and sanctions and third-party lawsuits claiming, for example, personal injury and/or property damage, as a result of past or future violations of, or liabilities under, environmental or other laws.

In addition, future events, such as changes to or more rigorous enforcement of environmental laws, could require us to make additional expenditures, modify or curtail our operations and/or install additional pollution control equipment. It is possible that regulatory agencies may enact new or more stringent clean-up standards for chemicals of concern, including chlorinated organic products that we manufacture. This could lead to expenditures for environmental remediation in the future that are additional to existing estimates.

We may incur claims relating to our use, manufacture, handling, storage or disposal of hazardous materials.

Our research and development and manufacturing processes require the transportation, storage and use of hazardous materials, including chemicals, and may result in the generation of hazardous waste. National and local laws and regulations in many of the jurisdictions in which we operate impose substantial potential liability for the improper use, manufacture, handling, storage, transportation and disposal of hazardous materials as well as for land contamination, and, in some cases, this liability may continue over long periods of time. Despite our compliance efforts, we cannot eliminate the risk of industrial accidents that may lead to discharges or releases of hazardous materials and any resultant injury, property damage or environmental contamination from these materials. For example, real properties that we owned or used in the past or that we own or use now or in the future may contain detected or undetected contamination resulting from our operations at those sites or the activities of prior owners or occupants. We may suffer from expenses, claims or liability which may fall outside of or exceed our insurance coverage.

Furthermore, changes to current environmental laws and regulations may impose further compliance requirements on us that may impair our research, development and production efforts as well as our other business activities. New and evolving regulatory requirements include producer responsibility frameworks and regulations related to addressing climate change or other emerging environmental areas. Increased environment, health and safety laws, regulations and enforcement could result in substantial costs and liabilities to us and could subject our use, manufacture, handling, storage, transportation, and disposal of hazardous materials to additional constraints. Consequently, compliance with these laws could result in capital expenditures as well as other costs and liabilities, thereby adversely affecting business, financial position and results of operations.

Our failure to comply with applicable laws and regulations material to our operations, such as export control, environmental and climate related laws and regulations, or the inability to timely obtain requisite approvals necessary for the conduct of our business, such as fab land and construction approvals, could harm our business and operational results or subject us to potential significant legal liability.

Because we engage in manufacturing activities in multiple jurisdictions and conduct business with our customers located worldwide, such activities are subject to a myriad of governmental regulations. Our failure to comply with any such laws or regulations, as amended from time to time, and our failure to comply with any information and document sharing requests from the relevant authorities in a timely manner could result in:

- Significant penalties and legal liabilities, such as the denial of import or export permits or third party private lawsuits, criminal or administrative proceedings;
- The temporary or permanent suspension of production of the affected products;
- The temporary or permanent inability to procure or use certain production critical chemicals or materials;

- Unfavorable alterations in our manufacturing, assembly and test processes;
- Challenges from our customers that place us at a significant competitive disadvantage, such as loss of actual or potential sales contracts in case we are unable to satisfy the applicable legal standard or customer requirement;
- Restrictions on our operations or sales;
- Loss of tax benefits, including termination of current tax incentives, disqualification of tax credit application and repayment of the tax benefits that we are not entitled to; and
- Damages to our goodwill and reputation.

Complying with applicable laws and regulations, such as environmental and climate related laws and regulations, could also require us, among other things, to do the following: (a) purchase, use or install remedial equipment; (b) implement remedial programs such as climate change mitigation programs; (c) modify our product designs and manufacturing processes, or incur other significant expenses such as obtaining renewable energy sources, renewable energy certificates or carbon credits, substitute raw materials or chemicals that may cost more or be less available for our operations.

Our inability to timely obtain approvals necessary for the conduct of our business could impair our operational and financial results. For example, if we are unable to timely obtain environmental related approvals needed to undertake the development and construction of a new fab or expansion project, then such inability may delay, limit, or increase the cost of our expansion plans that could also in turn adversely affect our business and operational results. In light of increased public interest in environmental issues, our operations and expansion plans may be adversely affected or delayed responding to public concern and social environmental pressures even if we comply with all applicable laws and regulations.

Delays in setting up facilities or receiving required permits could have an adverse effect on our financial position.

We are in the process of moving into a larger facility suitable to host the scale-up of production relating to Holography and Lithography. Lithography requires specific local government approvals to allow use of certain chemicals and their disposal. Any delay in setting up the facility and receiving permits may impact launch and/or development of related products and may have a material adverse effect on related products and consequently on our financial position.

We are highly dependent on our key personnel, and if we are not successful in attracting and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

Our ability to successfully manage and grow the business and to develop new products depends, in large part, on our ability to recruit and retain qualified employees, particularly highly skilled technical, sales, service, management, and key staff personnel. Competition for qualified resources is intense and other companies may have greater resources available to provide substantial inducements and to offer more competitive compensation packages. If we are not successful in attracting and retaining highly qualified personnel, it could have a material adverse effect on our business, financial condition, and results of operations.

Our results of operations could be adversely affected by labor shortages, turnover, labor cost increases and inflation.

A number of factors may adversely affect the labor force available to us in one or more of our geographies, including high employment levels, increasing market wages and other compensation costs, federal unemployment subsidies, and other government regulations, which include laws and regulations related to workers' health and safety, wage and hour practices and immigration. These factors can also impact the cost of labor. Increased turnover rates within our employee base can lead to decreased efficiency and increased costs, such as increased overtime to meet demand and increased wage rates to attract and retain employees. An overall labor shortage or lack of skilled labor, increased turnover or labor inflation could have a material adverse effect on results of operations.

Certain directors and officers may be subject to conflicts of interest.

Certain of our directors and officers may be involved in other business ventures through their direct and indirect participation in corporations, partnerships, joint ventures, etc. that may become potential competitors of the technologies, products and services we intend to provide. Situations may arise in connection with potential acquisitions or opportunities where the other interests of these directors and officers conflict with or diverge from our interests. In accordance with applicable corporate law, directors who have a material interest in or who are a party to a material contract or a proposed material contract with us are required, subject to certain exceptions, to disclose that interest and generally abstain from voting on any resolution to approve the contract. In addition, the directors' and officers' are required to act honestly and in good faith with a view to our best interests. However, in conflict-of-interest situations, our directors and officers may owe the same duty to another company and will need to balance their competing interests with their duties

to us. Circumstances (including with respect to future corporate opportunities) may arise that may be resolved in a manner that is unfavorable to us.

Risks Related to Legal Matters

We are, and may in the future become, subject to various legal proceedings and claims that arise in or outside the ordinary course of business and which could adversely affect our business.

We are, and may in the future become, subject to various legal proceedings and claims that arise in or outside the ordinary course of business. We cannot predict the outcome of these proceedings or provide an estimate of potential damages, if any. We believe that the claims in the securities class actions are without merit and intend to defend against them vigorously. Regardless, failure by us to obtain a favorable resolution of the claims set forth in the complaints could require us to pay damage awards or otherwise enter into settlement arrangements for which our insurance coverage may be insufficient. Any such damage awards or settlement arrangements in current or future litigation could have a material adverse effect on our business, operating results or financial condition. Even if plaintiffs' claims are not successful, defending against class action litigation is expensive and could divert management's attention and resources, all of which could have a material adverse effect on our financial condition and operations, operating results and financial condition and negatively affect the price of our common stock. In addition, such lawsuits may make it more difficult for us to finance our operations in the future. See Note 20, *Commitments and contingencies,* to the condensed consolidated interim financial statements of this Form 10-Q. in the notes to the condensed consolidated interim financial statements that are included elsewhere in this Quarterly Report on Form 10-Q for more information regarding our legal proceedings.

Current and future investigations by the SEC have and could continue to have an adverse impact on our business.

We are cooperating and intend to continue to cooperate with the SEC's investigation as described elsewhere in this Quarterly Report on Form 10-Q. Investigations can be inherently uncertain and their results and timing cannot be predicted. Regardless of the outcome, SEC investigations have and could continue to have an adverse impact us by resulting in legal costs, diversion of management resources, and other negative factors. SEC investigations could also result in reputational harm to us, which, among other things, may limit our ability to obtain new customers and enter into new agreements with our existing customers, or our ability to obtain financing, and have a material adverse effect on our current and future business, financial condition, results of operations and prospects. See Note 20, *Commitments and contingencies,* to the condensed consolidated interim financial statements of this Form 10-Q.

We may be affected by environmental laws and regulations.

We are subject to a variety of laws, rules and regulations related to the use, storage, handling, discharge and disposal of certain chemicals and gases used in our manufacturing process. Any of those regulations could require us to acquire expensive equipment or to incur substantial other expenses to comply with them. If we incur substantial additional expenses, product costs could significantly increase. Failure to comply with present or future environmental laws, rules and regulations could result in fines, suspension of production or cessation of operations.

Risks Related to our Common Stock

Future sales and issuances of a substantial number of shares of our common stock or rights to purchase common stock by our stockholders in the public market could result in additional dilution of the percentage ownership of our stockholders and cause our stock price to fall.

If our stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market, the trading price of our common stock could decline.

We have and may continue to issue equity, convertible securities or other securities to investors in public and private offerings. In addition, we currently have effective resale shelf registration statements which enable the selling stockholders thereunder to sell shares in the public market pursuant thereto.

We also have outstanding as of March 31, 2023, 39,920,919 warrants to purchase 39,920,919 shares of our common stock at a weighted average exercise price of $1.93 per share. These warrants include 37,037,039 warrants issued in the June 2022 registered direct offering with an exercise price of $1.75 per share that are now eligible for exercise. In addition, subsequent to March 31, 2023, we entered into the Underwriting Agreement, relating to our public offering of (i) 83,333,334 shares of our common stock, par value $0.001 and (ii) warrants to purchase up to an aggregate of 83,333,334 shares of our common stock. Each warrant is exercisable to purchase one share of common stock at a price of $0.375 per share subject to certain adjustments in the case of a Share Combination Event or a Dilutive Issuance as described in more detail in Note 21, Subsequent events, in the Notes to the condensed consolidated interim financial statements of this Quarterly Report on Form 10-Q, and expires five years from the date of issuance. If exercised, those warrants will

have a dilutive effect on the percentage ownership held by holders of our common stock. In the event of the occurrence of a Share Combination Event or a Dilutive Issuance, the terms of the warrants may be materially adjusted in favor of the holders thereof, cause significant dilution to existing shareholders, and otherwise have a material adverse effect on us.

Further, additional capital will be needed in the future to continue our planned operations, including commercialization efforts, expanded research and development activities and costs associated with operating a public company. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner, we determine from time to time. If we sell common stock, convertible securities or other equity securities, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to the holders of our common stock. Additional issuances and sales of our common stock, including shares of our common stock available for issuance to our employees, directors and consultants, or a perception that such shares will be sold in the public market, could result in additional dilution and the trading price of our common stock could decline.

You may experience future dilution as a result of future equity offerings or other equity issuances.

We will have to raise additional capital in the future. To raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may be lower than the price you paid per share. In addition, investors purchasing shares or other securities in the future could have rights superior to those of other investors. Any such issuance could result in substantial dilution to investors.

Our failure to satisfy certain Nasdaq listing requirements may result in our common stock being delisted from the Nasdaq Capital Market, which could eliminate the trading market for our common stock.

On March 20, 2023, we received written notice ("The Bid Price Letter") from The Nasdaq Stock Market LLC, or Nasdaq, indicating that we are not in compliance with the $1.00 minimum bid price requirement for continued listing on The Nasdaq Capital Market, as set forth in Nasdaq Listing Rule 5550(a)(2) (the "Bid Price Rule"). In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we have a period of 180 calendar days, or until September 18, 2023, to regain compliance with the Bid Price Rule. To regain compliance, the closing bid price of our common stock must meet or exceed $1.00 per share for a minimum of ten consecutive business days during this 180-day period. The Bid Price Letter was a notice of deficiency, not delisting, and does not currently affect the listing or trading of shares of our common stock on The Nasdaq Capital Market, which continues to trade under the symbol "MMAT." We intend to continue actively monitoring the closing bid price of shares of our common stock and may, if appropriate, consider implementing available options to regain compliance with the Bid Price Rule.

If we do not regain compliance within the allotted compliance periods, including any extensions that may be granted by Nasdaq, Nasdaq will provide notice that our common stock will be subject to delisting. We would then be entitled to appeal that determination to a Nasdaq hearings panel. If the stock is delisted, we may trade on the over-the-counter market, or even in the pink sheets, which would significantly decrease the liquidity of an investment in our common stock. In addition, the stock may be deemed to be penny stock. If our common stock is considered penny stock, we would be subject to rules that impose additional sales practices on broker-dealers who sell our securities. For example, broker-dealers would have to make a special suitability determination for the purchaser and have received the purchaser's written consent to the transaction prior to sale. Also, a disclosure schedule must be prepared prior to any transaction involving a penny stock and disclosure is required about sales commissions payable to both the broker-dealer and the registered representative and current quotations for the securities. Monthly statements are also required to be sent disclosing recent price information for the penny stock held in the account and information on the limited market in penny stock. Because of these additional obligations, some brokers may be unwilling to effect transactions in penny stocks. This could have an adverse effect on the liquidity of our common stock and the ability of investors to sell our common stock.

Subject to various spending levels approved by our board of directors, our management will have broad discretion in the use of the net proceeds from our capital raises, and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from our capital raises, and our stockholders will not have the opportunity as part of their investment decision to assess whether the net proceeds from our capital raises are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from our capital raises, their ultimate use may vary substantially from their currently intended use. You may not agree with our decisions, and our use of the proceeds from our capital raises may not yield any return to stockholders. Our failure to apply the net proceeds of our capital raises effectively could compromise our ability to pursue our growth strategy and we might not be able to yield a significant return, if any, on our investment of those net proceeds. Stockholders will not have the opportunity to influence our decisions on how to use our net proceeds from our capital raises. Pending their use, we may invest the net proceeds from our capital raises in interest and non-interest-bearing cash accounts, short-term, investment-grade, interest-bearing instruments and U.S. government securities. These temporary investments are not likely to yield a significant return.

An active, liquid and orderly trading market may not be sustained for our common stock, and, as a result, it may be difficult for you to sell your shares of our common stock.

The trading market for our common stock on the Nasdaq Capital Market may not be sustained. If the market for our common stock is not sustained, it may be difficult for you to sell your shares of common stock at an attractive price or at all. We cannot predict the prices at which our common stock will trade. It is possible that in one or more future periods our results of operations may not meet the expectations of public market analysts and investors, and, as a result of these and other factors, the price of our common stock may fall.

If equities or industry analysts do not publish research or reports about our company, or if they issue adverse or misleading opinions regarding us or our stock, our stock price and trading volume could decline.

The trading market for our common stock will rely in part on the research and reports that industry or financial analysts publish about us or our business. If no or few analysts commence coverage of us or if such coverage is not maintained, the market price for our stock may be adversely affected. Our stock price also may decline if any analyst who covers us issues an adverse or erroneous opinion regarding us, our business model, our intellectual property or our stock performance, or if our operating results fail to meet analysts' expectations. If one or more analysts cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline and possibly adversely affect our ability to engage in future financings.

The market price of our common stock has been and may continue to be volatile, and the value of your investment could decline significantly.

The trading price of our common stock has been and is likely to continue to be volatile. The trading price of our common stock since June 28, 2021 (the date of completion of the Arrangement) up to March 17, 2023, has ranged from a high of $ 7.96 to a low of $0.48. Factors that have caused, and could continue to cause, fluctuations in the trading price of our common stock include, but are not limited to, the following:

- sales of our common stock, or securities exercisable for or convertible into our common stock, or the perception that such sales or conversions could occur in the future;
- the impact of the COVID-19 pandemic and other public health crises, including on macroeconomic conditions and our business, results of operations and financial condition;
- price and volume fluctuations in the overall stock market from time to time;
- changes in operating performance, stock market valuations and volatility in the market prices of other industry peers;
- actual or anticipated quarterly variations in our results of operations or those of our competitors;
- actual or anticipated changes in our growth rate relative to our competitors;
- announcements by us or our competitors of acquisitions, new products, significant contracts, commercial relationships or capital commitments;
- manufacturing, labor or supply interruptions;
- developments with respect to intellectual property rights;
- developments with respect to litigation;
- our ability to develop and market new and enhanced products on a timely basis;
- commencement of, or our involvement in, litigation;
- major changes in our board of directors or management;
- changes in governmental regulations or in the status of our regulatory approvals;
- actual or perceived privacy, data protection or cybersecurity breaches or incidents;
- the trading volume of our common stock;
- failure of financial analysts to maintain coverage of us, changes in financial estimates by any analysts who follow us, or our failure to meet these estimates or the expectations of investors;
- fluctuations in the values of companies perceived by investors to be comparable to and peers of us;

- the financial projections we may provide to the public, any changes in these projections or our failure to meet these projections; and
- general economic conditions and slow or negative growth of related markets.

The stock market in general, and market prices for the securities of similar companies in particular, have from time to time experienced volatility that often has been unrelated to the operating performance of the underlying companies. These broad market and industry fluctuations may adversely affect the market price of our common stock, regardless of our operating performance, which might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. In several recent situations when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation. If any of our stockholders were to bring a lawsuit against us, the defense and disposition of the lawsuit could be costly and divert the time and attention of our management and materially adversely affect our results of operations. We currently have ongoing lawsuits. See Part 1, Item 3, "Legal Proceedings" in this Annual Report on Form 10-K for more information regarding these lawsuits and the SEC's investigation.

We may issue preferred stock whose terms could adversely affect the voting power or value of our common stock.

Our board of directors is authorized, without further stockholder action, and subject to Nasdaq rules, to issue preferred stock in one or more series and to designate the dividend rate, voting rights and other rights, preferences and restrictions of each such series. The terms of one or more classes or series of preferred stock could adversely impact the voting power or value of our common stock. Also, we might grant holders of preferred stock the right to elect some number of our directors in all events or on the happening of specified events or the right to veto specified transactions. Similarly, the repurchase or redemption rights or liquidation preferences we might assign to holders of preferred stock could affect the residual value of our common stock.

Anti-takeover provisions in our articles of incorporation and bylaws, as amended, as well as provisions in Nevada law, might discourage, delay, or prevent a change of control of us or changes in our management and, therefore, depress the trading price of our securities.

Our articles of incorporation and bylaws, as amended, as well as provisions in Nevada law, contain provisions that could have the effect of rendering more difficult or discouraging an acquisition deemed undesirable by our board. Our corporate governance documents include provisions:

- authorizing blank check preferred stock, which could be issued with voting, liquidation, dividend and other rights superior to our common stock;
- limiting the liability of, and providing indemnification to, our directors, including provisions that require us to advance payment for defending pending or threatened claims;
- limiting the ability of our stockholders to call and bring business before special meetings and to take action by written consent in lieu of a meeting;
- controlling the procedures for the conduct and scheduling of board and stockholder meetings;
- limiting the determination of the number of directors on our board and the filling of vacancies or newly created seats on the board to our Board then in office; and
- providing that directors may be removed by stockholders at any time.

These provisions, alone or together, could delay hostile takeovers and changes in control or changes in our management.

As a Nevada corporation, we are also subject to provisions of Nevada corporate law, including Section 78.411, et seq. of the Nevada Revised Statutes, which, among other things, prohibits a publicly-held Nevada corporation from engaging in a business combination with an interested stockholder, generally a person which together with its affiliates owns, or within the last two years has owned, 10% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner, and, unless otherwise provided in our articles of incorporation or by-laws, restricts the ability of an acquiring person to obtain a controlling interest of 20% or more of our voting shares. Our articles of

incorporation and by-laws, as amended, do not contain any provision which would currently keep the change of control restrictions of Section 78.378 from applying to it.

The existence of the foregoing provisions and anti-takeover measures could limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of us, thereby reducing the likelihood that our stockholders could receive a premium for their common stock in an acquisition.

We are a smaller reporting company. We cannot be certain whether the reduced disclosure requirements applicable to smaller reporting companies will make our common stock less attractive to investors or otherwise limit our ability to raise additional funds.

As of March 31, 2023, we are a "smaller reporting company" under applicable U.S. securities regulations. A smaller reporting company is a company that, as of the last business day of its most recently completed second fiscal quarter, has (i) an aggregate market value of the company's voting stock held by non-affiliates, or public float, of less than $250 million or (ii) less than $100 million in revenue and less than $700 million in public float. In addition, a smaller reporting company is able to provide simplified executive compensation disclosures in our filings and has certain other reduced disclosure obligations in our SEC filings, including, among other things, only being required to provide two years of audited financial statements in annual reports. Reduced disclosure in our SEC filings due to our status as a smaller reporting company may make it harder for investors to analyze our results of operations and financial prospects.

We have not paid cash dividends in the past and have no immediate plans to pay dividends.

Our current plan is to reinvest earnings, if any, to cover operating costs and otherwise remain competitive. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend. Therefore, you should not expect to receive cash dividends on our common stock.

Risks Related to the Spin-Off

Our spin-off of our oil and gas operations could be challenged under various state and federal fraudulent transfer laws.

In December 2022, we distributed all of our 165,472,241 outstanding shares of common stock of Next Bridge to holders of our Series A Non-Voting Preferred Stock on a pro rata basis, or the Spin-Off. It is possible that an unpaid creditor of Next Bridge or an entity vested with the power of such creditor (such as a trustee or debtor-in-possession in a bankruptcy) could claim under various state and federal fraudulent conveyance laws that the Spin-off left Next Bridge insolvent or with unreasonably small capital or that we intended or believed Next Bridge would incur debts beyond its ability to pay such debts as they mature. If a court were to agree with such a plaintiff, then such court could void the Spin-off as a fraudulent transfer and seek recovery of Next Bridge's liabilities from us. No assurance can be given as to what standard a court would apply to determine insolvency or that a court would determine that Next Bridge was insolvent at the time of or after giving effect to the Spin-off. Were a court to decide that the Spin-off was a fraudulent transfer and that we are responsible for any part of Next Bridge's liabilities, our financial condition and results of operations could be materially and adversely affected.

We may not be able to fully recover the $22.6 million owed to us by Next Bridge.

In connection with the Spin-off, we have loaned Next Bridge an aggregate of $22.6 million for the operation of its oil and gas business. This amount, plus interest, is due October 3, 2023. If Next Bridge is not able to raise sufficient funds to repay these loans, our financial condition and results of operations could be materially and adversely affected.

Public attention to and inquiries regarding the "naked" short selling of our previously outstanding Series A Preferred Stock may negatively affect the trading value of our common stock.

Published reports assert that traders engaged in widespread violations of Regulation SHO by effecting "naked" short selling of our Series A Preferred Stock prior to the Spin-Off. The circumstances around the trading of the Series A Preferred Stock have generated significant public interest. We believe that the Financial Institutions Regulatory Authority and other entities may be reviewing the occurrence of naked short selling in general and possibly naked short selling in our Series A Preferred Stock in particular. The resulting public attention may make investors less willing to buy our common stock and could negatively affect the trading price of our common stock.

General Risk Factors

We are exposed to fluctuations in currency exchange rates.

Our majority of revenues are denominated in U.S. dollars which are recognized in the entity located outside of the United States, and therefore are exposed to significant currency exchange fluctuations. Recent events in the global financial markets have been coupled with increased volatility in the currency markets. Fluctuations in the exchange rate between the U.S. dollar, the Canadian dollar and the British Pound may have a material adverse effect on our business, financial condition, and operating results. We may, in the future, establish a program to hedge a portion of our foreign currency exposure with the objective of minimizing the impact of adverse foreign currency exchange movements. With appropriate risk management and oversight this may be able to offset future risk, however a hedging strategy will result in additional operating costs.

Uncertain global macroeconomic conditions could adversely affect our results of operations and financial condition.

Uncertain global macroeconomic conditions that affect the economy and the economic outlook of the United States, Canada, Europe, UK and other parts of the world could adversely affect our customers and vendors, which could adversely affect our results of operations and financial condition. These uncertainties, including, among other things, sovereign and foreign bank debt levels, the inability of national or international political institutions to effectively resolve economic or budgetary crises or issues, trade disputes or changes in trading rules and tariffs between nations, consumer confidence, unemployment levels, interest rates, availability of capital, fuel and energy costs, tax rates, and the threat or outbreak of terrorism or public unrest, could adversely impact our customers and vendors, which could adversely affect us. Recessionary conditions and depressed levels of consumer and commercial spending may cause customers to reduce, modify, delay or cancel plans to purchase our products and may cause vendors to reduce their output or change their terms of sales. We generally sell products to customers with credit payment terms. If customers' cash flow or operating or financial performance deteriorates, or if they are unable to make scheduled payments or obtain credit, they may not be able to pay, or may delay payment to us. Likewise, for similar reasons vendors may restrict credit or impose different payment terms. Any inability of current or potential customers to pay us for our products or any demands by vendors for different payment terms may adversely affect our results of operations and financial condition.

Operating as a public company requires us to incur substantial costs and requires substantial management attention. In addition, certain members of our management team have limited experience managing a public company.

As a public company, we incur substantial legal, accounting and other expenses that we did not incur as a private company. For example, we are subject to the reporting requirements of the Exchange Act, the applicable requirements of the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the rules and regulations of the SEC and the listing standards of the Nasdaq Stock Market. For example, the Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business, financial condition and results of operations. We are also required to maintain effective disclosure controls and procedures and internal control over financial reporting. Compliance with these rules and regulations has increased and will continue to increase our legal and financial compliance costs and increase demand on our systems. In addition, as a public company, we may be subject to stockholder activism, which can lead to additional substantial costs, distract management and impact the manner in which we operate our business in ways we cannot currently anticipate. As a result of disclosure of information in filings required of a public company, our business and financial condition will become more visible, which may result in threatened or actual litigation, including by competitors.

Additionally, certain members of our management team have limited experience managing a publicly traded company, interacting with public company investors and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage our transition to being a public company subject to significant regulatory oversight and reporting obligations under the federal securities laws and the continuous scrutiny of securities analysts and investors. These obligations and constituents will require significant attention from our senior management and could divert their attention away from the day-to-day management of our business, which could adversely affect our business, financial condition and results of operations.

Our results of operations could vary as a result of the methods, estimates, and judgments that we use in applying our accounting policies.

The methods, estimates, and judgments that we use in applying our accounting policies have a significant impact on our results of operations (see "Critical Accounting Policies and Estimates" in Part II, Item 7 of the Form 10-K/A). Such methods, estimates and judgments are, by their nature, subject to substantial risks, uncertainties and assumptions, and factors may arise over time that lead us to change our methods, estimates and judgments. Changes in those methods, estimates and judgments could significantly affect our results of operations.

Increased scrutiny of our environmental, social and governance responsibilities and practices may result in additional costs, liability risks, and may adversely impact our reputation, our ability to attract and retain a skilled workforce and willingness of customers and suppliers to do business with us.

Investor advocacy groups, institutional investors, proxy advisory services, stockholders, government, regulators, employees, customers and other stakeholders are increasingly focused on environmental, social and governance ("ESG") practices of companies. Additionally, public interest and legislative pressure related to public companies' ESG practices continues to grow. If our ESG practices fail to meet regulatory requirements or investor or other stakeholders' evolving expectations and standards for responsible business practices in numerous areas, including climate change and greenhouse gas emissions, environmental stewardship, support for communities where we operate, human and civil rights, director and employee diversity, human capital management, employee health and safety practices, product quality and safety, data security, supply chain management, regulatory compliance corporate governance and transparency and employing ESG strategies within business operations, our brand, reputation and employee retention may be negatively impacted and customers and suppliers may be unwilling to do business with us. As we work to align our ESG practices with industry standards, we will be dealing with uncertainties and risks resulting from the forward-looking nature of many ESG issues, In addition, we will continue to expand our disclosures in these areas and doing so may result in additional costs and require additional resources to monitor, report, and comply with our various ESG practices. If we fail to adopt ESG standards or practices as quickly as stakeholders desire, report on our ESG efforts or practices accurately, or satisfy the expectations of stakeholders, our reputation, business, financial performance and growth may be adversely impacted.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Furnish the exhibits required by Item 601 of Regulation S-K (§ 229.601 of this chapter).

Exhibit Number	Exhibit Description	Incorporated by Reference		
		Form	Exhibit Number	Filing Date
3.1.0	Articles of Incorporation	10-K	3.1	18-Mar-19
3.1.1	Certificate of Amendment to Articles of Incorporation dated December 10, 2014	10-Q	3.2	15-May-15
3.1.2	Certificate of Amendment to Articles of Incorporation dated September 15, 2015	10-Q	3.3	12-Nov-15
3.1.3	Certificate of Amendment to Articles of Incorporation dated August 18, 2017.	10-Q	3.4	9-Nov-18
3.1.4	Amendment to the Articles of Incorporation of Torchlight Energy Resources, Inc., dated June 14, 2021	8-K	3.1	16-Jun-21
3.1.5	Certificate of Amendment related to the Reverse Stock Split and Name Change, filed June 25, 2021	8-K	3.1	29-Jun-21
3.2.0	Certificate of Designation of Preferences, Rights and Limitations of Series B Special Voting Preferred Stock, dated June 14, 2021	8-K	3.3	16-Jun-21
3.5.0	Amended and Restated Bylaws	8-K	3.1	26-Oct-16
10.1	First Amendment to Meta Materials Inc. - Next Bridge Loan Agreement, dated as of December 21, 2022	8-K	2.1	4-Apr-23
10.2	Second Amendment to Meta Materials Inc. - Next Bridge Loan Agreement, dated as of March 31, 2023	8-K	2.2	4-Apr-23
10.3	First Amendment to Meta Materials Inc. & Oilco Holdings Inc - 8% Promissory Note, dated September 2, 2022	8-K	2.3	4-Apr-23
10.4	Second Amendment to Meta Materials Inc. & Oilco Holdings Inc - 8% Promissory Note, dated as of March 31, 2023	8-K	2.4	4-Apr-23
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			Filed Herewith
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			Filed Herewith
32.1+	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			Furnished Herewith
32.2+	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			Furnished Herewith
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.			Filed Herewith
101.SCH	Inline XBRL Taxonomy Extension Schema Document			Filed Herewith
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document			Filed Herewith
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document			Filed Herewith
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document			Filed Herewith
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document			Filed Herewith
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)			Filed Herewith

+ The certifications attached as Exhibit 32.1 that accompany this Quarterly Report on Form 10-Q are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the registrant under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Quarterly Report on Form 10-Q, irrespective of any general incorporation language contained in such filing

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

Meta Materials Inc.

Dated: May 12, 2023

By: /s/ George Palikaras

George Palikaras
President and Chief Executive Officer
(Principal Executive Officer)

Dated: May 12, 2023

By: /s/ Uzi Sasson

Uzi Sasson
Chief Financial Officer and Chief Operating Officer
(Principal Financial and Accounting Officer)

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, George Palikaras, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Meta Materials Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 12, 2023

By: /s/ **George Palikaras**

George Palikaras
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Uzi Sasson, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Meta Materials Inc;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 12, 2023

By: /s/ Uzi Sasson

Uzi Sasson
Chief Financial Officer and Chief Operating Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Meta Materials Inc (the "Company") on Form 10-Q for the period ending March 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: May 12, 2023

By: /s/ **George Palikaras**

George Palikaras
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Meta Materials Inc (the "Company") on Form 10-Q for the period ending March 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: May 12, 2023

By: /s/ **Uzi Sasson**

Uzi Sasson
Chief Financial Officer and Chief Operating Officer
(Principal Financial and Accounting Officer)