

SECURITIES & EXCHANGE COMMISSION EDGAR FILING

Lightwave Logic, Inc.

Form: 10-Q

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 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, 2020

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 0-52567

Lightwave Logic, Inc.

(Exact name of registrant as specified in its charter)

Nevada

(State or other jurisdiction of
incorporation or organization)

82-049-7368

(I.R.S. Employer Identification No.)

369 Inverness Parkway, Suite 350

Englewood, CO

(Address of principal executive offices)

80112

(Zip Code)

(720) 340-4949

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act: **None**

Title of each class

Trading Symbol(s)

Name of exchange on which registered

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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer ☐

Non-accelerated filer ☐

Accelerated filer ☒

Smaller reporting company ☒

Emerging growth company ☐

If an emerging growth company, indicate by checkmark 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 ☒

The number of shares of the registrant's common stock outstanding as of May 11, 2020 was 90,595,133.

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Forward-Looking Statements

This report on Form 10-Q contains, and our officers and representatives may from time to time make, “forward-looking statements” within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as: “anticipate,” “intend,” “plan,” “goal,” “seek,” “believe,” “project,” “estimate,” “expect,” “continuing,” “ongoing,” “strategy,” “future,” “likely,” “may,” “should,” “could,” “will” and similar references to future periods. Examples of forward-looking statements include, among others, statements we make regarding expected operating results, such as anticipated revenue; anticipated levels of capital expenditures for our current fiscal year; our belief that we have, or will have, sufficient liquidity to fund our business operations during the next 12 months; strategy for gaining customers, growth, product development, market position, financial results and reserves.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following: lack of available funding; general economic and business conditions; deterioration in global economic and financial market conditions generally including as a result of pandemic health issues caused by COVID-19 and its effects, competition from third parties; intellectual property rights of third parties; regulatory constraints; changes in technology and methods of marketing; delays in completing various engineering and manufacturing programs; changes in customer order patterns; changes in product mix; success in technological advances and delivering technological innovations; shortages in components; production delays due to performance quality issues with outsourced components; and other factors beyond the Company's control.

The ultimate correctness of these forward-looking statements depends upon a number of known and unknown risks and events. We discuss our known material risks under Item 1.A “Risk Factors” contained in our Company's Annual Report on Form 10-K for the year ended December 31, 2019 and under Part II, Item 1.A “Risk Factors” contained in this report on Form 10-Q. Many factors could cause our actual results to differ materially from the forward-looking statements. In addition, we cannot assess the impact of each factor 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.

The forward-looking statements speak only as of the date on which they are made, and, except as required by law, we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events.

PART I – FINANCIAL INFORMATION

Item 1 Financial Statements

LIGHTWAVE LOGIC, INC.

FINANCIAL STATEMENTS

MARCH 31, 2020

(UNAUDITED)

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LIGHTWAVE LOGIC, INC.
BALANCE SHEETS

	March 31, 2020 (Unaudited)	December 31, 2019 (Audited)
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	\$ 2,028,259	\$ 2,236,344
Prepaid expenses and other current assets	381,426	372,549
	<u>2,409,685</u>	<u>2,608,893</u>
PROPERTY AND EQUIPMENT - NET	2,243,565	2,416,503
OTHER ASSETS		
Intangible assets - net	926,752	939,481
Operating Lease - Right of Use - Building	821,794	859,979
	<u>1,748,546</u>	<u>1,799,460</u>
TOTAL ASSETS	<u>\$ 6,401,796</u>	<u>\$ 6,824,856</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES		
Accounts payable	\$ 173,051	\$ 88,423
Current portion of equipment purchase	445,204	630,329
Accounts payable and accrued expenses - related parties	38,815	14,805
Deferred lease liability	41,778	41,778
Operating lease liability	159,081	156,524
Accrued expenses	17,838	65,769
	<u>875,767</u>	<u>997,628</u>
LONG TERM LIABILITIES		
Deferred lease liability	153,187	163,632
Operating lease liability	662,713	703,455
Long term portion of equipment purchase	13,107	52,427
	<u>829,007</u>	<u>919,514</u>
TOTAL LIABILITIES	<u>1,704,774</u>	<u>1,917,142</u>
STOCKHOLDERS' EQUITY		
Preferred stock, \$0.001 par value, 1,000,000 authorized, no shares issued or outstanding	—	—
Common stock \$0.001 par value, 250,000,000 authorized, 89,578,547 and 87,409,600 issued and outstanding at March 31, 2020 and December 31, 2019	89,579	87,410
Additional paid-in-capital	70,690,553	69,076,240
Accumulated deficit	<u>(66,083,110)</u>	<u>(64,255,936)</u>
TOTAL STOCKHOLDERS' EQUITY	<u>4,697,022</u>	<u>4,907,714</u>
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	<u>\$ 6,401,796</u>	<u>\$ 6,824,856</u>

See accompanying notes to these financial statements.

LIGHTWAVE LOGIC, INC.
STATEMENTS OF OPERATIONS
FOR THE THREE MONTHS ENDING MARCH 31, 2020 AND 2019
(UNAUDITED)

	For the Three Months Ending March 31, 2020	For the Three Months Ending March 31, 2019
NET SALES	\$ —	\$ —
COST AND EXPENSE		
Research and development	1,189,771	1,152,053
General and administrative	606,425	568,430
	<u>1,796,196</u>	<u>1,720,483</u>
LOSS FROM OPERATIONS	(1,796,196)	(1,720,483)
OTHER INCOME (EXPENSE)		
Interest income	30	62
Commitment fee	(31,008)	(298,357)
	<u>(30,978)</u>	<u>(298,295)</u>
NET LOSS	<u>\$ (1,827,174)</u>	<u>\$ (2,018,778)</u>
Basic and Diluted Loss per Share	<u>\$ (0.02)</u>	<u>\$ (0.03)</u>
Basic and Diluted Weighted Average Number of Shares	<u>88,398,378</u>	<u>80,434,957</u>

See accompanying notes to these financial statements.

LIGHTWAVE LOGIC, INC.
STATEMENT OF STOCKHOLDERS' EQUITY
MARCH 31, 2020
(UNAUDITED)

	<u>Number of Shares</u>	<u>Common Stock</u>	<u>Additional Paid-in Capital</u>	<u>Accumulated Deficit</u>	<u>Total</u>
BALANCE AT DECEMBER 31, 2019 (AUDITED)	87,409,600	\$ 87,410	\$ 69,076,240	\$ (64,255,936)	\$ 4,907,714
Common stock issued to institutional investor	2,125,000	2,125	1,349,988	—	1,352,113
Common stock issued for commitment shares	43,947	44	30,964	—	31,008
Options issued for services	—	—	206,437	—	206,437
Warrants issued for services	—	—	26,924	—	26,924
Net loss for the three months ending March 31, 2020	—	—	—	(1,827,174)	(1,827,174)
BALANCE AT MARCH 31, 2020 (UNAUDITED)	<u>89,578,547</u>	<u>\$ 89,579</u>	<u>\$ 70,690,553</u>	<u>\$ (66,083,110)</u>	<u>\$ 4,697,022</u>
	<u>Number of Shares</u>	<u>Common Stock</u>	<u>Additional Paid-in Capital</u>	<u>Accumulated Deficit</u>	<u>Total</u>
BALANCE AT DECEMBER 31, 2018 (AUDITED)	79,176,330	\$ 79,177	\$ 62,356,854	\$ (57,528,969)	\$ 4,907,062
Common stock issued to institutional investor	2,000,000	2,000	1,417,585	—	1,419,585
Common stock issued for commitment shares	396,139	396	297,960	—	298,356
Options issued for services	—	—	187,383	—	187,383
Warrants issued for services	—	—	18,827	—	18,827
Net loss for the three months ending March 31, 2019	—	—	—	(2,018,778)	(2,018,778)
BALANCE AT MARCH 31, 2019 (UNAUDITED)	<u>81,572,469</u>	<u>\$ 81,573</u>	<u>\$ 64,278,609</u>	<u>\$ (59,547,747)</u>	<u>\$ 4,812,435</u>

See accompanying notes to these financial statements.

LIGHTWAVE LOGIC, INC.
STATEMENTS OF CASH FLOW
(UNAUDITED)

	For the Three Months Ending March 31, 2020	For the Three Months Ending March 31, 2019
CASH FLOWS FROM OPERATING ACTIVITIES		
Net loss	\$ (1,827,174)	\$ (2,018,778)
Adjustment to reconcile net loss to net cash used in operating activities		
Warrants issued for services	26,924	18,827
Stock options issued for services	206,437	187,383
Common stock issued for services and fees	31,008	298,356
Depreciation and amortization of patents	199,171	138,832
Decrease in assets		
Prepaid expenses and other current assets	(8,877)	242,535
(Decrease) increase in liabilities		
Accounts payable	84,628	(29,116)
Accounts payable and accrued expenses-related parties	24,010	15,664
Deferred lease liability	(10,445)	(8,465)
Accrued expenses	(47,931)	8,178
Net cash used in operating activities	<u>(1,322,249)</u>	<u>(1,146,584)</u>
CASH FLOWS FROM INVESTING ACTIVITIES		
Cost of intangibles	(8,149)	(11,810)
Purchase of property and equipment	(5,355)	(43,138)
Net cash used in investing activities	<u>(13,504)</u>	<u>(54,948)</u>
CASH FLOWS FROM FINANCING ACTIVITIES		
Issuance of common stock, institutional investor	1,352,113	1,419,585
Repayment of equipment purchase payable	(224,445)	(107,047)
Net cash provided by financing activities	<u>1,127,668</u>	<u>1,312,538</u>
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	<u>(208,085)</u>	<u>111,006</u>
CASH AND CASH EQUIVALENTS - BEGINNING OF PERIOD	<u>2,236,344</u>	<u>2,174,625</u>
CASH AND CASH EQUIVALENTS - END OF PERIOD	<u>\$ 2,028,259</u>	<u>\$ 2,285,631</u>
Supplemental Disclosure of Non-cash operational activity:		
Operating Lease - Right of Use - Building and Operating lease liability	\$ —	\$ 885,094

See accompanying notes to these financial statements.

NOTE 1 – NATURE OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Financial Statements

The accompanying unaudited financial statements have been prepared by Lightwave Logic, Inc. (the Company). These statements include all adjustments (consisting only of its normal recurring adjustments) which management believes necessary for a fair presentation of the statements and have been prepared on a consistent basis using the accounting policies described in the Summary of Accounting Policies included in the 2019 Annual Report. Certain financial information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States have been condensed or omitted pursuant to the rules and regulations of the Securities and Exchange Commission, although the Company firmly believes that the accompanying disclosures are adequate to make the information presented not misleading. The financial statements should be read in conjunction with the financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, as filed with the Securities and Exchange Commission. The interim operating results for the three months ending March 31, 2020 may not be indicative of operating results expected for the full year.

Nature of Business

Lightwave Logic, Inc. is a technology company focused on the development of next generation photonic devices and non-linear optical polymer materials systems for applications in high speed fiber-optic data communications and optical computing markets. Currently the Company is in various stages of photonic device and materials development and evaluation with potential customers and strategic partners. The Company expects to obtain a revenue stream from datacom and telecom devices, sales of non-linear optical polymers, and product development agreements prior to moving into full-scale production.

The Company's current development activities are subject to significant risks and uncertainties, including failing to secure additional funding to operationalize the Company's technology now under development.

In March 2020, the World Health Organization declared the outbreak of a novel coronavirus (COVID-19) as a pandemic which continues to spread throughout the United States. In mid March 2020 the Governor of Colorado declared a health emergency and issued an order to close all nonessential businesses. The Company temporarily curtailed most of its business operations from mid March 2020 through May 1, 2020. While the Company expects this matter to negatively impact its results of operations, cash flow and financial position, the related financial impact cannot be reasonably estimated at this time.

Stock-based Payments

The Company accounts for stock-based compensation under the provisions of Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 718, "Compensation - Stock Compensation", which requires the measurement and recognition of compensation expense for all stock-based awards made to employees and directors based on estimated fair values on the grant date. The Company estimates the fair value of stock-based awards on the date of grant using the Black-Scholes model. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service periods using the straight-line method. In June 2018, the FASB issued ASU No. 2018-07, *Compensation – Stock Compensation (Topic 718), Improvements to Nonemployee Share-Based Payment Accounting*. The amendments in this Update expand the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. Prior to this Update, Topic 718 applied only to share-based transactions to employees.

Loss Per Share

The Company follows FASB ASC 260, "Earnings per Share", resulting in the presentation of basic and diluted earnings per share. Because the Company reported a net loss in 2020 and 2019, common stock equivalents, including stock options and warrants were anti-dilutive; therefore, the amounts reported for basic and dilutive loss per share were the same.

NOTE 1- NATURE OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Comprehensive Income

The Company follows FASB ASC 220.10, "Reporting Comprehensive Income." Comprehensive income is a more inclusive financial reporting methodology that includes disclosure of certain financial information that historically has not been recognized in the calculation of net income (loss). Since the Company has no items of other comprehensive income, comprehensive income (loss) is equal to net income (loss).

Recently Issued Accounting Pronouncements Not Yet Adopted

As of March 31, 2020, there are no recently issued accounting standards not yet adopted which would have a material effect on the Company's financial statements.

Recently Adopted Accounting Pronouncements

As of March 31, 2020 and for the period then ended, there are no recently adopted accounting standards that have a material effect on the Company's financial statements.

NOTE 2 – MANAGEMENT'S PLANS

Our future expenditures and capital requirements will depend on numerous factors, including: the impact of the COVID-19 pandemic; the progress of our research and development efforts; the rate at which we can, directly or through arrangements with original equipment manufacturers, introduce and sell products incorporating our polymer materials technology; the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; market acceptance of our products and competing technological developments; and our ability to establish cooperative development, joint venture and licensing arrangements. From late March through May 1, 2020, the Company curtailed most operations due to the COVID-19 pandemic. On April 24, 2020, the Company received \$410,700 in loan funding from the Coronavirus Aid, Relief, and Economic Security Act (CARES) Paycheck Protection Program, administered by the U.S. Small Business Administration (See Note 13). We expect that we will incur approximately \$586,000 of expenditures per month over the next 12 months. Our current cash position enables us to finance our operations through August 2020 before we will be required to replenish our cash reserves pursuant to the Lincoln Park financing. Subject to any additional impact of the COVID-19 pandemic, we expect our Lincoln Park financing (described in Note 9) to provide us with sufficient funds to maintain our operations over that period of time and until May 2022. Our cash requirements are expected to increase at a rate consistent with the Company's path to revenue growth as we expand our activities and operations with the objective of commercializing our electro-optic polymer technology. We currently have no debt to service other than the loan under the Paycheck Protection Program, the majority of which the Company expects to be forgiven pursuant to loan forgiveness standards currently in effect.

NOTE 3 – PREPAID EXPENSES AND OTHER CURRENT ASSETS

Prepaid expenses and other current assets consist of the following:

	March 31, 2020	December 31, 2019
Research & Development Credit	\$ 158,612	\$ 158,612
Insurance	52,848	89,828
Other	73,497	58,756
Rent	36,525	36,525
Prototype Devices	57,737	27,810
Prepaid Material	2,207	1,018
	<u>\$ 381,426</u>	<u>\$ 372,549</u>

LIGHTWAVE LOGIC, INC.
NOTES TO FINANCIAL STATEMENTS
MARCH 31, 2020 AND 2019

NOTE 4 – PROPERTY AND EQUIPMENT

Property and equipment consists of the following:

	March 31, 2020	December 31, 2019
Office equipment	\$ 84,751	\$ 84,751
Lab equipment	3,738,412	3,733,057
Furniture	33,128	33,128
Leasehold improvements	229,401	229,401
	4,085,692	4,080,337
Less: Accumulated depreciation	1,842,127	1,663,834
	<u>\$ 2,243,565</u>	<u>\$ 2,416,503</u>

Depreciation expense for the three months ending March 31, 2020 and 2019 was \$178,293 and \$118,422. During the three months ending March 31, 2020 and 2019, the Company did not retire or sell any property and equipment.

NOTE 5 – INTANGIBLE ASSETS

This represents legal fees and patent fees associated with the prosecution of patent applications. The Company has recorded amortization expense on patents granted, which are amortized over the remaining legal life. Maintenance patent fees are paid to a government patent authority to maintain a granted patent in force. Some countries require the payment of maintenance fees for pending patent applications. Maintenance fees paid after a patent is granted are expensed, as these are considered ongoing costs to “maintain a patent”. Maintenance fees paid prior to a patent grant date are capitalized to patent costs, as these are considered “patent application costs”. No amortization expense has been recorded on the remaining patent applications since patents have yet to be granted.

On June 11, 2018, the Company purchased patents for \$315,000.

Patents consists of the following:

	March 31, 2020	December 31, 2019
Patents	\$ 1,275,226	\$ 1,267,077
Less: Accumulated amortization	348,474	327,596
	<u>\$ 926,752</u>	<u>\$ 939,481</u>

Amortization expense for the three months ending March 31, 2020 and 2019 was \$20,878 and \$20,410. There were no patent costs written off for the three months ending March 31, 2020 and 2019.

NOTE 6 – LONG TERM EQUIPMENT PURCHASE PAYABLE

Outstanding long term equipment purchase payable is comprised of the following:

Final Year of Maturity	Classification	Interest Rate	March 31, 2020	December 31, 2019
	Current	0.00%	\$ 445,204	\$ 630,329
2021	Long term	0.00%	13,107	52,427
			<u>\$ 458,311</u>	<u>\$ 682,756</u>

NOTE 7 – COMMITMENTS

On October 30, 2017, the Company entered into a new lease to lease approximately 13,420 square feet of office, laboratory and research and development space located in Colorado for the Company's new principal executive offices and research and development facility. The term of the lease is sixty- one (61) months, beginning on November 1, 2017 and ending on November 30, 2022. The term shall be extended for an additional twenty-four (24) months, subject to certain conditions, waivable solely by Landlord in its sole and absolute discretion. Base rent for the first year of the lease term is approximately \$168,824, with an increase in annual base rent of approximately 3% in each subsequent year of the lease term. As specified in the lease, the Company paid the landlord (i) all base rent for the period November 1, 2017 and ending on October 31, 2019, in the sum of \$347,045; and (ii) the estimated amount of tenant's proportionate share of operating expenses for the same period in the sum of \$186,293. Commencing on November 1, 2019, monthly installments of base rent and one-twelfth of landlord's estimate of tenant's proportionate share of annual operating expenses shall be due on the first day of each calendar month. The lease also provides that (i) on November 1, 2019 landlord shall pay the Company for the cost of the cosmetic improvements in the amount of \$3.00 per rentable square foot of the premises, and (ii) on or prior to November 1, 2019, the Company shall deposit with Landlord the sum of \$36,524 as a security deposit which shall be held by landlord to secure the Company's obligations under the lease. The lease contains an option to extend the term to October 31, 2024. On October 30, 2017, the Company entered into an agreement with the tenant leasing the premise from the landlord ("Original Lessee") whereby the Original Lessee agreed to pay the Company the sum of \$260,000 in consideration of the Company entering into the lease and landlord agreeing to the early termination of the Original Lessee's lease agreement with landlord. The consideration of \$260,000 was received on November 1, 2017.

Due to the adoption of the new lease standard, the Company has capitalized the present value of the minimum lease payments commencing November 1, 2019, including the additional option period using an estimated incremental borrowing rate of 6.5%. The minimum lease payments do not include common area annual expenses which are considered to be nonlease components.

As of January 1, 2019 the operating lease right-of-use asset and operating lease liability amounted to \$885,094 with no cumulative-effect adjustment to the opening balance of retained earnings/accumulated deficit. The Company has elected not to recognize right-of-use assets and lease liabilities arising from short-term leases.

There are no other material operating leases.

LIGHTWAVE LOGIC, INC.
NOTES TO FINANCIAL STATEMENTS
MARCH 31, 2020 AND 2019

NOTE 7 – COMMITMENTS (CONTINUED)

The Company is obligated under an operating lease for office and laboratory space. The aggregate minimum future lease payments under the operating leases, including the extended term are as follows:

YEARS ENDING DECEMBER 31,	AMOUNT
2020	\$ 146,927
2021	201,501
2022	207,563
2023	213,781
2024	182,624
	952,396
Less discounted interest	(130,602)
TOTAL	\$ 821,794

Rent expense approximating \$32,359 and \$10,786 is included in research and development and general and administrative expenses for the three months ended March 31, 2020. Rent expense approximating \$28,409 and \$9,470 is included in research and development and general and administrative expenses for the three months ended March 31, 2019.

NOTE 8 – INCOME TAXES

There is no income tax benefit for the losses for the three months ended March 31, 2020 and 2019 since management has determined that the realization of the net deferred tax asset is not assured and has created a valuation allowance for the entire amount of such benefits.

The Company's policy is to record interest and penalties associated with unrecognized tax benefits as additional income taxes in the statement of operations. As of January 1, 2020, the Company had no unrecognized tax benefits, or any tax related interest or penalties. There were no changes in the Company's unrecognized tax benefits during the period ended March 31, 2020. The Company did not recognize any interest or penalties during 2019 related to unrecognized tax benefits. With few exceptions, the U.S. and state income tax returns filed for the tax years ending on December 31, 2016 and thereafter are subject to examination by the relevant taxing authorities.

NOTE 9 – STOCKHOLDERS' EQUITY

Preferred Stock

Pursuant to the Company's Articles of Incorporation, the Company's board of directors is empowered, without stockholder approval, to issue series of preferred stock with any designations, rights and preferences as they may from time to time determine. The rights and preferences of this preferred stock may be superior to the rights and preferences of the Company's common stock; consequently, preferred stock, if issued could have dividend, liquidation, conversion, voting or other rights that could adversely affect the voting power or other rights of the common stock. Additionally, preferred stock, if issued, could be utilized, under special circumstances, as a method of discouraging, delaying or preventing a change in control of the Company's business or a takeover from a third party.

NOTE 9 – STOCKHOLDERS' EQUITY (CONTINUED)

Common Stock Options and Warrants

2016 Purchase Agreement

In January 2016, the Company signed a Purchase Agreement with an institutional investor to sell up to \$20,000,000 of common stock. The Company also entered into a registration rights agreement with the institutional investor whereby the Company agreed to file a registration statement related to the transaction with the U.S. Securities and Exchange Commission registering 5,000,000 shares of the Company's common stock. The registration statement was filed on March 25, 2016. The registration statement became effective April 7, 2016. The Company registered an additional 5,000,000 shares pursuant to a registration statement filed on April 19, 2017 which became effective June 15, 2017. The Company registered an additional 5,000,000 shares pursuant to a registration statement filed on May 2, 2018 which became effective May 11, 2018. Under the Purchase Agreement and at Company's sole discretion, the institutional investor has committed to invest up to \$20,000,000 in common stock over a 36-month period. The Company issued 350,000 shares of restricted common stock to the institutional investor as an initial commitment fee valued at \$237,965, fair value, and 650,000 shares of common stock are reserved for additional commitment fees to the institutional investor in accordance with the terms of the Purchase Agreement. During the three month period ending March 31, 2019, the institutional investor purchased 1,550,000 shares of common stock for proceeds of \$1,011,585 and the Company issued 32,879 shares of common stock as additional commitment fee, valued at \$24,162, fair value. The 2016 Purchase Agreement expired April, 2019.

2019 Purchase Agreement

In January 2019, the Company signed a Purchase Agreement with the institutional investor to sell up to \$25,000,000 of common stock. The Company registered 9,500,000 shares pursuant to a registration statement filed on January 30, 2019 which became effective February 13, 2019. The Company issued 350,000 shares of common stock to the institutional investor as an initial commitment fee valued at \$258,125, fair value, and 812,500 shares of common stock are reserved for additional commitment fees to the institutional investor in accordance with the terms of the Purchase Agreement. The Company registered an additional 6,000,000 shares pursuant to a registration statement filed on January 24, 2020 which became effective February 4, 2020. During the period January 2019 through March 31, 2020, the institutional investor purchased 8,275,000 shares of common stock for proceeds of \$5,979,487 and the Company issued 194,338 shares of common stock as additional commitment fee, valued at \$156,513, fair value, leaving 618,162 in reserve for additional commitment fees. During the three month period ending March 31, 2020, the institutional investor purchased 2,125,000 shares of common stock for proceeds of \$1,352,113 and the Company issued 43,947 shares of common stock as additional commitment fee, valued at \$31,008, fair value. During April through May 2020, the institutional investor purchased 1,000,000 shares of common stock for proceeds of \$510,312 and the Company issued 16,586 shares of common stock as additional commitment fee, valued at \$9,283, fair value, leaving 601,576 in reserve for additional commitment fees.

NOTE 10 – STOCK BASED COMPENSATION

During 2007, the Board of Directors of the Company adopted the 2007 Employee Stock Plan ("2007 Plan") that was approved by the shareholders. Under the Plan, the Company is authorized to grant options to purchase up to 10,000,000 shares of common stock to directors, officers, employees and consultants who provide services to the Company. The Plan is intended to permit stock options granted to employees under the 2007 Plan to qualify as incentive stock options under Section 422 of the Internal Revenue Code of 1986, as amended ("Incentive Stock Options"). All options granted under the 2007 Plan, which are not intended to qualify as Incentive Stock Options are deemed to be non-qualified options ("Non-Statutory Stock Options"). Effective June 24, 2016, the 2007 Plan was terminated. As of March 31, 2020, options to purchase 4,450,000 shares of common stock have been issued and are outstanding.

NOTE 10 – STOCK BASED COMPENSATION (CONTINUED)

During 2016, the Board of Directors of the Company adopted the 2016 Equity Incentive Plan (“2016 Plan”) that was approved by the shareholders at the 2016 annual meeting of shareholders on May 20, 2016. Under the 2016 Plan, the Company is authorized to grant awards of incentive and non-qualified stock options and restricted stock to purchase up to 3,000,000 shares of common stock to employees, directors and consultants. Effective May 16, 2019, the number of shares of the Company’s common stock available for issuance under the 2016 Plan was increased from 3,000,000 to 8,000,000 shares. As of March 31, 2020, options to purchase 3,580,000 shares of common stock have been issued and are outstanding and 4,411,250 shares of common stock remain available for grants under the 2016 Plan.

Both plans are administered by the Board of Directors or its compensation committee which determines the persons to whom awards will be granted, the number of awards to be granted, and the specific terms of each grant. Subject to the provisions regarding Ten Percent Shareholders, the exercise price per share of each option cannot be less than 100% of the fair market value of a share of common stock on the date of grant. Options granted under the 2016 Plan are generally exercisable for a period of 10 years from the date of grant and may vest on the grant date, another specified date or over a period of time.

The Company uses the Black-Scholes option pricing model to calculate the grant-date fair value of an award, with the following assumptions for 2020: no dividend yield in all years, expected volatility, based on the Company’s historical volatility, 70.9%, risk-free interest rate 1.82% and expected option life of 10 years. The expected life is based on the estimated average of the life of options using the “simplified” method, as prescribed in FASB ASC 718, due to insufficient historical exercise activity during recent years.

As of March 31, 2020, there was \$428,410 of unrecognized compensation expense related to non-vested market-based share awards that is expected to be recognized through September 30, 2021.

Share-based compensation was recognized as follows:

	For the Three Months Ending March 31, 2020	For the Three Months Ending March 31, 2019
2007 Employee Stock Option Plan	\$ —	\$ —
2016 Equity Incentive Plan	206,437	187,383
Warrants	26,924	18,827
Total share-based compensation	\$ 233,361	\$ 206,210

The following tables summarize all stock option and warrant activity of the Company during the three months ended March 31, 2020:

	Non-Qualified Stock Options and Warrants Outstanding and Exercisable		
	Number of Shares	Exercise Price	Weighted Average Exercise Price
Outstanding, December 31, 2019	16,302,517	\$0.57 - \$1.69	\$ 0.85
Granted	370,000	\$0.80	\$ 0.80
Expired	(8,750)	\$1.10	\$ 1.10
Outstanding, March 31, 2020	16,663,767	\$0.57 - \$1.69	\$ 0.85
Exercisable, March 31, 2020	15,759,079	\$0.57 - \$1.69	\$ 0.85

NOTE 10 – STOCK BASED COMPENSATION (CONTINUED)

There was no aggregate intrinsic value of options and warrants outstanding and exercisable as of March 31, 2020. The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying options and warrants and the closing stock price of \$0.552 for the Company's common stock on March 31, 2020. No options or warrants were exercised during the three month period ending March 31, 2020.

Non-Qualified Stock Options and Warrants Outstanding			
Range of Exercise Prices	Number Outstanding Currently Exercisable at March 31, 2020	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price of Options and Warrants Currently Exercisable
\$0.57 - \$1.69	15,759,079	3.59 Years	\$0.85

NOTE 11 – RELATED PARTY

At March 31, 2020 the Company had a legal accrual to a related party of \$25,315, director fees accrued in the amount of \$10,000 and travel and office expense accruals of an officer in the amount of \$3,500. At December 31, 2019 the Company had a legal accrual to related party of \$10,152 and travel and office expense accruals of officers in the amount of \$4,653.

During July 2018, the Company issued a warrant to purchase 100,000 shares of common stock at a purchase price of \$1.15 per share for professional services to be rendered over a twelve month period commencing July 1, 2018. The warrant was valued at \$62,637, fair value upon issuance, using the Black-Scholes Option Pricing Formula. The expense is being recognized based on service terms of the agreement over a twelve month period. For the three months ending March 31, 2019, the Company recognized \$15,659 of expense.

NOTE 12 – RETIREMENT PLAN

The Company established a 401(k) retirement plan covering all eligible employees beginning November 15, 2013. For the three months ending March 31, 2020 and 2019, a contribution of \$13,080 and \$9,543 was charged to expense for all eligible non-executive participants.

NOTE 13 – SUBSEQUENT EVENTS

On April 24, 2020, the Company received \$410,700 in loan funding from the Paycheck Protection Program, established pursuant to the recently enacted Coronavirus Aid, Relief, and Economic Security Act and administered by the U.S. Small Business Administration. The unsecured loan is evidenced by a promissory note of the Company dated April 23, 2020 in the principal amount of \$410,700, to Community Banks of Colorado, a division of NBH Bank, the lender. The loan proceeds may be used to cover payroll costs, rent and utility costs.

The Company is currently operating under the Governor of Colorado's Executive Order, Safer-at Home, expiring 30 days from April 27, 2020, unless extended further by Executive Order. The Company started slowly bringing some employees back into the facility on May 4, 2020 under the directives of the Governor's Executive Order, and under the guidelines of the local and state health departments.

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

The following discussion and analysis should be read in conjunction with our financial statements, included herewith. This discussion should not be construed to imply that the results discussed herein will necessarily continue into the future, or that any conclusion reached herein will necessarily be indicative of actual operating results in the future. Such discussion represents only the best present assessment of our management. This information should also be read in conjunction with our audited historical financial statements which are included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the Securities and Exchange Commission on March 18, 2019.

COVID-19

During this uncertain time, our critical priorities are the health and safety of our employees and contractors, all of whom began working from home and reduced travel to essential business needs starting in late March. We currently are operating under the Governor of Colorado's Executive Order, Safer-at Home, expiring 30 days from April 27, 2020, unless extended further by Executive Order. We started slowly bringing some employees back into the facility on May 4, 2020 under the directives of the Governor's Executive Order, and under the guidelines of the local and state health departments. We will continue to actively monitor the situation and may take further actions that alter our business operations as may be required by federal, state, local authorities, or that we determine are in the best interests of our employees and stockholders.

The COVID-19 pandemic has had and continues to have a significant impact on local, state, national and global economies. The actions taken by governments, as well as businesses and individuals, to limit the spread of the disease has significantly disrupted the Company's normal activities. Numerous businesses, including some of our contractors, collaborative partners and suppliers, have either shut down or are operating on a limited basis with employees working from home, some employees have been furloughed or laid off and social distancing has been mandated through stay-at-home orders, and continues with the Safer-at-Home orders. The Company expects these actions to have a significant impact on the Company's results of operations, particularly with respect to research and development, and financial position. The full extent of the impact to the Company due to the impact of the COVID-19 pandemic cannot be currently determined. The extent to which the COVID-19 pandemic will impact the Company will depend on future developments, which are highly uncertain and cannot be reasonably predicted, including the duration of the outbreak, the increase or reduction in governmental restrictions to businesses and individuals, the potential for a resurgence of the virus and other factors. The longer the COVID-19 pandemic continues, the greater the potential negative financial effect on the Company.

Overview

Lightwave Logic, Inc. is a development stage company moving toward commercialization of next generation electro-optic photonic devices made on its P²ICTM technology platform which uses in-house proprietary high-activity and high-stability organic polymers. Electro-optical devices convert data from electric signals into optical signals for multiple applications.

Our differentiation at the device level is in higher speed, lower power consumption, simplicity of manufacturing and reliability. We have demonstrated higher speed and lower power consumption in packaged devices, and during 2019, we developed new materials that promise to further lower power consumption. We are currently focused on testing and demonstrating the simplicity of manufacturability and reliability of our devices.

We are initially targeting applications in data communications and telecommunications markets and are exploring other applications for our polymer technology platform.

Materials Development

Our Company designs and synthesizes organic chromophores for use in its own proprietary electro-optic *polymer systems* and photonic device designs. A polymer system is not solely a material, but also encompasses various technical enhancements necessary for its implementation. These include host polymers, poling methodologies, and molecular spacer systems that are customized to achieve specific optical properties. Our organic electro-optic polymer systems compounds are mixed into solution form that allows for thin film application. Our proprietary electro-optic polymers are designed at the molecular level for potentially superior performance, stability and cost-efficiency. We believe they have the potential to replace more expensive, higher power consuming, slower-performance materials and devices used in fiber-optic communication networks.

Our patented and patent pending molecular architectures are based on a well-understood chemical and quantum mechanical occurrence known as *aromaticity*. Aromaticity provides a high degree of molecular stability that enables our core molecular structures to maintain stability under a broad range of operating conditions.

We expect our patented and patent-pending optical materials along with trade secrets and licensed materials, to be the core of and the enabling technology for future generations of optical devices, modules, sub-systems and systems that we will develop or potentially out-license to electro-optic device manufacturers. Our Company contemplates future applications that may address the needs of semiconductor companies, optical network companies, Web 2.0 media companies, high performance computing companies, telecommunications companies, aerospace companies, and government agencies.

Device Design and Development

Electro-optic Modulators

Our Company designs its own proprietary electro-optical modulation devices. Electro-optical modulators convert data from electric signals into optical signals that can then be transmitted over high-speed fiber-optic cables. Our modulators are electro-optic, meaning they work because the optical properties of the polymers are affected by electric fields applied by means of electrodes. Modulators are key components that are used in fiber optic telecommunications, data communications, and data centers networks etc., to convey the high data flows that have been driven by applications such as pictures, video streaming, movies etc., that are being transmitted through the Internet. Electro-optical modulators are expected to continue to be an essential element as the appetite and hunger for data increases every year.

Polymer Photonic Integrated Circuits (P²IC™)

Our Company also designs its own proprietary polymer photonic integrated circuits (otherwise termed a polymer PIC). A polymer PIC is a photonic device that integrates several photonic functions on a single chip. We believe that our technology can enable the ultra-miniaturization needed to increase the number of photonic functions residing on a semiconductor chip to create a progression like what was seen in the computer integrated circuits, commonly referred to as Moore's Law. One type of integration is to combine several instances of the same photonic functions such as a plurality of modulators to create a 4 channel polymer PIC. In this case, the number of photonic components would increase by a factor of 4. Another type is to combine different types of devices including from different technology bases such as the combination of a semiconductor laser with a polymer modulator. Our P²IC™ platform encompasses both these types of architecture.

Current photonic technology today is struggling to reach faster device speeds. Our modulator devices, enabled by our electro-optic polymer material systems, work at extremely high frequencies (wide bandwidths) and possess inherent advantages over current crystalline electro-optic material contained in most modulator devices such as lithium niobate (LiNbO₃), indium phosphide (InP), silicon (Si), and gallium arsenide (GaAs). Our advanced electro-optic polymer platform is creating a new class of modulators and associated PIC platforms that can address higher data rates in a lower cost, lower power consuming manner, with much simpler modulation techniques.

Our electro-optic polymers can be integrated with other materials platforms because they can be applied as a thin film coating in a fabrication clean room such as may be found in semiconductor foundries. Our polymers are unique in that they are stable enough to seamlessly integrate into existing CMOS, Indium Phosphide (InP), Gallium Arsenide (GaAs), and other semiconductor manufacturing lines.

Business Strategy

Our business strategy anticipates that our revenue stream will be derived from one or some combination of the following: (i) technology licensing for specific product application; (ii) joint venture relationships with significant industry leaders; or (iii) the production and direct sale of our own electro-optic device components. Our objective is to be a leading provider of proprietary technology and know-how in the electro-optic device market. In order to meet this objective, we intend to:

- Further the development of proprietary organic electro-optic polymer material systems
- Develop photonic devices based on our P²IC™ technology
- Continue to develop proprietary intellectual property
- Grow our commercial device development capabilities
- Grow our product reliability and quality assurance capabilities
- Grow our optoelectronic packaging and testing capabilities

- Grow our commercial material manufacturing capabilities
- Maintain/develop strategic relationships with major telecommunications and data communications companies to further the awareness and commercialization of our technology platform
- Continue to add high-level personnel with industrial and manufacturing experience in key areas of our materials and device development programs.

Create Organic Polymer-Enabled Electro-Optic Modulators

We intend to utilize our proprietary optical polymer technology to create an initial portfolio of commercial electro-optic polymer product devices with applications for various markets, including telecommunications, data communications and data centers. These product devices will be part of our proprietary photonics integrated circuit (PIC) technology platform.

We expect our initial modulator products will operate at data rates at least 50 Gbaud (capable of 50 Gbps with standard data encoding of NRZ and 100 Gbps with more complex PAM-4 encoding). Our devices are highly linear, enabling the performance required to take advantage of the more advance complex encoding schemes. We are currently developing our polymer technology to operate at the next industry node of 100Gbaud.

Our Proprietary Products in Development

As part of a two-pronged marketing strategy, our Company is developing several optical devices, which are in various stages of development and that utilize our polymer optical materials. They include:

Ridge Waveguide Modulator

Our ridge electro-optic waveguide modulator was designed and fabricated in our in-house laboratory. The fabrication of our first in-house device is significant to our entire device program and is an important starting point for modulators that are being developed for target markets. We have multiple generations of new materials that we will soon be optimizing for this specific design. In September 2017 we announced that our initial alpha prototype ridge waveguide modulator, enabled by our P²IC™ polymer system, demonstrated bandwidth performance levels that will enable 50 Gbaud modulation in fiber-optic communications. This device demonstrated true amplitude (intensity) modulation in a Mach-Zehnder modulator structure incorporating our polymer waveguides. This important achievement will allow users to utilize arrays of 4 x 50 Gbaud (4x 100 Gbps) polymer modulators using PAM-4 encoding to access 400 Gbps data rate systems. These ridge waveguide modulators are currently being packaged with our partner into prototype packages.

These prototype packages will enable potential customers to evaluate the performance at 50 Gbaud. Once a potential customer generates technical feedback on our prototype, we expect to be asked to optimize the performance to their specifications. Assuming this is successful, we expect to enter a qualification phase where our prototypes will be evaluated more fully.

In parallel, we are developing modulators for scalability to higher data rates above 50 Gbaud. In September 2018, we showed in conference presentations the potential of our polymer modulator platform to operate at over 100 GHz bandwidth. This preliminary result corresponds to 100 Gbaud data rates using a simple NRZ data encoding scheme or 200 Gbps with PAM-4 encoding. With 4 channel arrays in our P²IC™ platform, the Company thus has the potential to address both 400 Gbps and 800 Gbps markets. While customers may start the engagement at 50 Gbaud, we believe potential customers recognize that scalability to higher speeds is an important differentiator of the polymer technology.

We believe the ridge waveguide modulator represents our first commercially viable device and targets the fiber optics communications market. We have completed internal market analysis and are initially targeting interconnect reach distances of greater than 10km. In these markets, the system network companies are looking to implement modulator-based transceivers that can handle aggregated data rates 100 Gbps and above. The market opportunity for greater than 10km is worth over \$1B over the next decade.

Advanced Modulator Structures

As part of supporting further improvement and scalability of our platform, we continue to explore more advanced device structures. Our functional polymer photonics slot waveguide modulator utilizes an existing modulator structure with one of our proprietary electro-optic polymer material systems as the enabling material layer and is functional as an operating prototype device.

Preliminary testing and initial data on our polymer photonics slot waveguide modulators demonstrated several promising characteristics. The tested polymer photonic chip had a 1-millimeter square footprint, enabling the possibility of sophisticated integrated optical circuits on a single silicon substrate. In addition, the waveguide structure was approximately 1/20 the length of a typical inorganic-based silicon photonics modulator waveguide.

With the combination of our proprietary electro-optic polymer material and the extremely high optical field concentration in the slot waveguide modulator, the test modulators demonstrated less than 2.2 volts to operate. Initial speeds exceeded 30-35 GHz in the telecom, 1550 nanometer frequency band. This is equivalent to 4 x 10Gbps, inorganic, lithium niobate modulators that would require approximately 12-16 volts to move the same amount of information.

We are continuing our collaborative development of our polymer photonic slot waveguide modulators with an associated third-party research. We are now designing slot modulators to operate at data rates greater than 50 Gbaud.

Our Long-Term Device Development Goal - Multichannel Polymer Photonic Integrated Circuit (P²IC™)

Our P²IC™ platform is positioned to address markets with aggregated data rates of 100 Gbaud, 400 Gbaud, 800 Gbaud and beyond. Our P²IC™ platform will contain a number of photonic devices that may include, over and above polymer-based modulators, photonic devices such as lasers, multiplexers, demultiplexers, detectors, fiber couplers.

While our polymer-based ridge waveguide and slot modulators are currently under development to be commercially viable products, our long-term device development goal is to produce a platform for the 400 Gbps and beyond transceiver market. This has been stated in our photonics product roadmap that is publicly available on our website. The roadmap shows a progression in speed from 50 Gbaud based ridge waveguide modulators to 100 Gbaud based ridge waveguide modulators. The roadmap shows a progression in integration in which the modulators are arrayed to create a flexible, multichannel P²IC™ platform that spans 100 Gbps, 400 Gbps, 800 Gbps, and potentially 1.6 Tbps aggregated data-rate markets.

We showed bandwidths of polymer-based modulator devices at a major international conference (ECOC – European Conference on Optical Communications 2018) with bandwidths that exceeded 100GHz. We noted that to achieve 100Gbaud, the polymer-based modulator only needs to achieve 80GHz bandwidth. During ECOC 2019, we showed environmental stability. We continue to develop our polymer materials and device designs to optimize additional metrics. We are now optimizing the device parameters for very low voltage operation.

Our Target Markets

Cloud computing and data centers

Big data is a general term used to describe the voluminous amount of unstructured and semi-structured data a Company creates -- data that would take too much time and cost too much money to load into a relational database for analysis. Companies are looking to cloud computing in their data centers to access all the data. Inherent speed and bandwidth limits of traditional solutions and the potential of organic polymer devices offer an opportunity to increase the bandwidth, reduce costs and improve speed of access.

Datacenters have grown to enormous sizes with hundreds of thousands and even millions of servers in a single datacenter. The number of so-called “hyperscale” datacenters are expected to continue to increase in number. Due to their size, a single “datacenter” may consist of multiple large warehouse-size buildings on a campus or even several locations distributed around a metropolitan area. Data centers are confronted with the problem of moving vast amounts of data not only around a single data center building, but also between buildings in distributed data center architecture. Links within a single datacenter building may be shorter than 500 meters, though some will require optics capable of 2 km. Between datacenter buildings, there is an increasing need for high performance interconnects over 10km in reach.

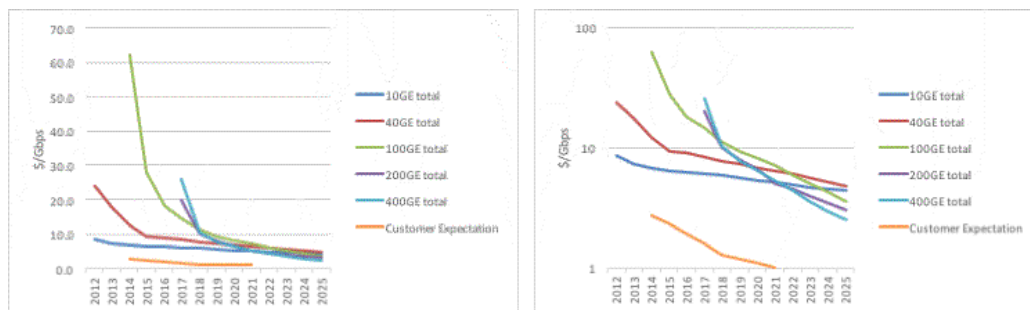
Our modulators are suitable for single-mode fiber optic links. We believe that our single mode modulator solutions will be competitive at 500m to 10km link distances, but it will be ideally suited at greater than 10km link distances.

The telecommunications industry has evolved from transporting traditional analogue voice data over copper wire into the movement of digital voice and data. Telecommunication companies are faced with the enormous increasing challenges to keep up with the resulting tremendous explosion in demand for bandwidth. The metropolitan network is especially under stress now and into the near future. Telecommunications companies provide services to some data center customers for the inter-data center connections discussed above. 5G mobile upgrade, autonomous driving and IoT are expected to increase the need for data stored and processed close to the end user in edge data centers. This application similarly requires optics capable of very high speeds and greater than 10 km reach.

Industry issues of scaling

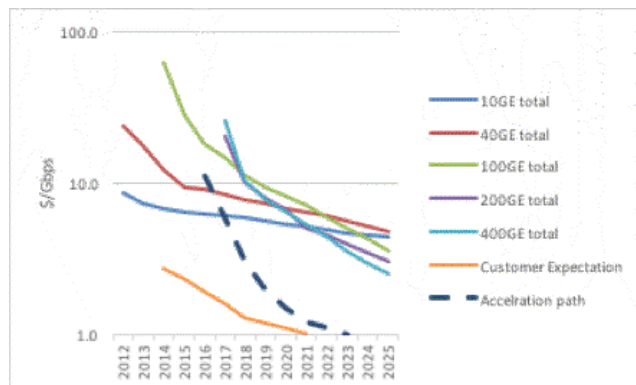
The key issues facing the fiber-optic communications industry are the economic progress and scalability of any PIC based technological platform. The polymer platform is unique in that it is truly scalable. Scalable means being able to scale up for high speed data rates, while simultaneously being able to scale down in cost. This allows a competitive cost per data rate or cost per Gbps metric to be achieved.

Fiber optic datacenter and high-performance computing customers want to achieve the metric of \$1/Gbps @ 400Gbps (this essentially means a single mode fiber optic link that has a total cost of \$400 and operates with a data rate of 400Gbps which also means that each transceiver at each end of the fiber optic link must be able to be priced at \$200), but as industry tries to match this target, it is already falling behind as can be seen in the Figure below which plots generic typical PIC based technology:



In the above figures that forecast \$/Gbps to 2025 (where the left-hand graph is a linear vertical scale, and the right-hand graph is a log scale), it can be seen that the orange curve plots the customer expectation, while the other color curves show \$/Gbps improvement over time for various high-speed data rate transceivers using PIC based technologies. A gap is appearing between what customer expect and what the technologists can produce.

Polymers play an important role in PICs over the next decade as they can reduce or close the gap between customer expectations and technical performance through effective scaling increase of high performance with low cost. This is shown below how polymers have the potential to scale to the needs of the customers over the next 5 years.



Some of the things needed to achieve the scaling performance of polymers in integrated photonics platform is within sight today:

- 1) Increased r_{33} (which leads to very low Vpi in modulator devices) and we are currently optimizing our polymers for this.
- 2) Increase temperature stability so that the polymers can operate at broader temperature ranges effectively, where we have made significant progress over the past few years.
- 3) Low optical loss in waveguides and active/passive devices for improved optical budget metrics which is currently an ongoing development program at our Company.
- 4) Higher levels of hermeticity for lower cost packaging of optical sub-assemblies within a transceiver module, where our advanced designs are being implemented into polymer-based packages.

Recent Significant Events and Milestones Achieved

During February and March 2018, we moved our Newark, Delaware synthetic laboratory and our Longmont, Colorado optical testing laboratory and corporate headquarters to office, laboratory and research and development space located at 369 Inverness Parkway, Suite 350, Englewood, Colorado. The 13,420 square foot Englewood facility includes fully functional 1,000 square feet of class 1,000 cleanroom, 500 square feet of class 10,000 cleanroom, chemistry laboratories, and analytic laboratories. The Englewood facility streamlines all of our Company's research and development workflow for greater operational efficiencies.

During March 2018, our Company, together with our packaging partner, successfully demonstrated packaged polymer modulators designed for 50Gbps, which we believe will allow us to scale our P²IC™ platform with our Mach-Zehnder ridge waveguide modulator design as well as other photonics devices competitively in the 100Gbps and 400Gbps datacom and telecommunications applications market. We are currently fine-tuning the performance parameters of these prototypes in preparation for customer evaluations.

During June 2018, our Company Acquired the Polymer Technology Intellectual Property Assets of BrPhotonics Productos Optoelectrónicos S.A., a Brazilian corporation, which significantly advanced our patent portfolio of electro-optic polymer technology with 15 polymer chemistry materials, devices, packaging and subsystems patent and further strengthened our design capabilities to solidify our market position as we prepare to enter the 400Gbps integrated photonics marketplace with a highly competitive, scalable alternative to installed legacy systems.

Also, during June 2018, our Company promoted polymer PICs and Solidified Polymer PICs as Part of the Photonics Roadmap at the World Technology Mapping Forum in Enschede, Netherlands, which includes our Company's technology of polymers and polymer PICs that have the potential to drive not only 400Gbps aggregate data rate solutions, but also 800Gbps and beyond.

In August 2018 we announced the completion (ahead of schedule) of our fully equipped on-site fabrication facility, where we are expanding our high-speed test and design capabilities. We also announced the continuation of the building of our internal expertise with the hiring of world-class technical personnel with 100Gbps experience.

In February 2019 we announced a major breakthrough in our development of clean technology polymer materials that target the insatiable demand for fast and efficient data communications in the multi-billion-dollar telecom and data markets supporting Internet, 5G and IoT (Internet of Things) webscale services. The improved thermally stable polymer has more than double the electro-optic response of our previous materials, enabling optical device performance of well over 100 GHz with extremely low power requirements. This addition to the family of Perkinamine™ polymers will hold back run-away consumption of resources and energy needed to support ever-growing data consumption demands. We continue to conduct testing of the material and assessment of associated manufacturing processes and device structures prior to release to full development.

In March 2019 we created an Advisory Board comprised of three world-class leaders in the photonics industry: Dr. Craig Ciesla, Dr. Christoph S. Harder, and Mr. Andreas Umbach. The Advisory Board is working closely with our Company leadership to enhance our Company's product positioning and promote our polymer modulator made on our proprietary *Faster by Design*[™] polymer P²IC[™] platform. The mission of the Advisory Board is initially to increase our Company's outreach into the datacenter interconnect market and later to support expansion into other billion-dollar markets. The Advisory Board members have each been chosen for their combination of deep technical expertise, breadth of experience and industry relationships in the fields of fiber optics communications, polymer and semiconductor materials. Each of the Advisory Board members has experience at both innovators like Lightwave Logic and large industry leaders of the type most likely to adopt game-changing polymer-based products. In addition, they possess operational experience with semiconductor and polymer businesses.

Also, in March 2019, our Company received the "Best Achievement in PIC Platform" award for our 100 GHz polymer platform from the PIC International Conference. The award recognizes innovative advances in the development and application of key materials systems driving today's photonic integrated circuits (PICs) and providing a steppingstone to future devices.

During the second quarter of 2019, our Company promoted its polymers at ColInnovate in May and the World Technology Mapping Forum in June. ColInnovate is a meeting of semiconductor industry experts. The World Technology Mapping Forum is a group authoring a photonics roadmap out to 2030.

In September 2019 at the prestigious European Conference on Communications (ECOC) in Dublin, Ireland, we showed measured material response over frequency and the resulting optical data bits stream on our clean technology polymer materials, the newest addition to our family of Perkinamine[™] polymers, that meet and exceed of our near-term target speed of 80 GHz. We also released data demonstrating stability under elevated temperatures in the activated (poled to create data carrying capability) state.

In October 2019, we reported that energy-saving polymer technology is highlighted in the recently published Integrated Photonics Systems Roadmap - International (IPSR-I). The roadmap validates the need for low-voltage, high-speed technologies such as ours.

In May 2020, we announced that our latest electro-optic polymer material has exceeded target performance metrics at 1310 nanometers (nm), a wavelength commonly used in high-volume datacenter fiber optics. This material demonstrates an attractive combination at 1310 nm of high electro-optic coefficient, low optical loss and good thermal stability at 85⁰ Celsius. The material is expected to enable modulators with 80 GHz bandwidth and low drive power, and has an electro-optic coefficient of 200 pm/V, an industry measure of how responsive a material is to an applied electrical signal. This metric, otherwise known as r33, is very important in lowering power consumption when the material is used in modulator devices. This technology is applicable to shorter reach datacenter operators, for whom decreasing power consumption is imperative to the bottom line of a facility. We considered this a truly historic moment—not only in our Company's history, but in our industry—as we have demonstrated a polymer material that provides the basis for a world-class solution at the 1310 nm wavelength, something which other companies have spent decades attempting to achieve.

As we move forward to diligently meet our goals, we continue to work closely with our packaging partner for the 50Gbaud and 100 Gbaud prototypes, and we are advancing our reliability and characterization efforts to support our prototyping. We are actively engaged with test equipment manufacturers of the most advanced test equipment to test our state-of-the-art polymer devices. We continue to engage with multiple industry bodies to promote our roadmap. We continue to fine tune our business model with target markets, customers, and technical specifications. Discussions with prospective customers are validating that our modulators are ideally suited for the datacenter and telecommunications markets that are over 10km in length. Details of what these prospective customers are seeking from a prototype are delivered to our technical team.

Capital Requirements

As a development stage company, we do not generate revenues. We have incurred substantial net losses since inception. We have satisfied our capital requirements since inception primarily through the issuance and sale of our common stock.

Results of Operations

Comparison of three months ended March 31, 2020 to three months ended March 31, 2019

Comparison of three months ended March 31, 2020 to three months ended March 31, 2019

Revenues

As a development stage company, we had no revenues during the three months ended March 31, 2020 and March 31, 2019. The Company is in various stages of photonic device and material development and evaluation. We expect the next revenue stream to be in product development agreements and prototype devices prior to moving into production.

Operating Expenses

Our operating expenses were \$1,796,196 and \$1,720,483 for the three months ended March 31, 2020 and 2019, respectively, for an increase of \$75,713. This is primarily due to increases in depreciation, research and development salaries and wages, investor relation expenses, research and development non-cash stock option and warrant amortization and other tax expenses offset by decreases in product development consulting expenses, laboratory and wafer fabrication materials and supplies, legal fees, general and administrative consulting expenses and research and development travel expenses.

Included in our operating expenses for the three months ended March 31, 2020 was \$1,189,771 for research and development expenses compared to \$1,152,053 for the three months ended March 31, 2019, for an increase of \$37,718. This is primarily due to increases in depreciation, research and development salaries and wages and non-cash stock option and warrant amortization offset by decreases in product development consulting expenses, laboratory and wafer fabrication materials and supplies and travel expenses.

Research and development expenses currently consist primarily of compensation for employees and consultants engaged in internal research, product development activities; laboratory operations, prototypes, electro-optic device designs, development and internal material and device testing; prototype device fabrication; costs; and related operating expenses.

We expect to continue to incur substantial research and development expense to develop and commercialize our photonic devices, PIC development and electro-optic materials platform. These expenses will increase as a result of accelerated development effort to support commercialization of our non-linear optical polymer materials technology; to build photonic device prototypes in our in-house laboratories; hiring additional technical and support personnel; engaging senior technical advisors; pursuing other potential business opportunities and collaborations; customer testing and evaluation; and incurring related operating expenses.

Depreciation expense increased \$59,907 from \$115,385 for the three months ended March 31, 2019 to \$175,292 for the three months ended March 31, 2020. The primary reason for the increase was due to the addition of capital equipment for wafer fabrication and testing.

Wages and salaries increased \$45,333 from \$507,715 for the three months ended March 31, 2019 to \$553,048 for the three months ended March 31, 2020. The reason for the variation was primarily due to an increase in full time technical personnel working on device and material development.

Research and development non-cash stock option amortization increased \$20,880 from \$90,494 for the three months ended March 31, 2019 to \$111,374 for the three months ended March 31, 2020. The reason for the variation was due to stock options and warrants vesting schedules.

Product development consulting expenses decreased \$55,028 from \$149,035 for the three months ended March 31, 2019 to \$94,007 for the three months ended March 31, 2020. The primary reason for the decrease was due to the completion of a research and development project.

Laboratory and wafer fabrication materials and supplies decreased \$24,559 from \$134,488 for the three months ended March 31, 2019 to \$109,929 for the three months ended March 31, 2020. The primary reason for the decrease was the scale back of operations due to the COVID-19 pandemic.

Travel expenses decreased \$13,827 from \$31,128 for the three months ended March 31, 2019 to \$17,301 for the three months ended March 31, 2020. The primary reason for the decrease was the scale back of operations due to the COVID-19 pandemic.

General and administrative expense consists primarily of compensation and support costs for management staff, and for other general and administrative costs, including executive, sales and marketing, investor relations, accounting and finance, legal, consulting and other operating expenses.

General and administrative expenses increased \$37,995 to \$606,425 for the three months ended March 31, 2020 compared to \$568,430 for the three months ended March 31, 2019. The increase is primarily due to increases in investor relation expenses and other tax expenses offset by decreases in legal fees and general and administrative consulting expenses.

Investor relation expenses increased \$35,125 to \$41,375 for the three months ending March 31, 2020 from \$6,250 for the three months ended March 31, 2019. The primary reason for the increase was the engagement of an investor relations firm.

Other tax expenses increased \$15,118 to \$15,175 for the three months ending March 31, 2020 from \$57 for the three months ending March 31, 2019. The primary reason for the increase was due to personal property tax on capital equipment.

Legal fees decreased \$21,299 to \$56,056 for the three months ended March 31, 2020 compared to \$77,355 for the three months ended March 31, 2019. The primary reason for the decrease was due to the reduction in legal needs during this period.

General and administrative consulting fees decreased \$11,042 to \$0 for the three months ending March 31, 2020 from \$11,042 for the three months ended March 31, 2019. The primary reason for the decrease was due to a reduction in consulting fees.

We expect general and administrative expense to increase in future periods as we increase the level of corporate and administrative activity, including increases associated with our operation as a public company; and significantly increase expenditures related to the future production and sales of our products.

Other Income (Expense)

Other expenses decreased \$267,317 to \$30,978 for the three months ending March 31, 2020 from \$298,295 for the three months ending March 31, 2019, relating to the commitment fee associated with the purchase of shares by an institutional investor for sale under a stock purchase agreement.

Net Loss

Net loss was \$1,827,174 and \$2,018,778 for the three months ended March 31, 2020 and 2018, respectively, for an decrease of \$191,604, due primarily to decreases in commitment fee associated with the purchase agreement, product development consulting expenses, laboratory and wafer fabrication materials and supplies, legal fees, general and administrative consulting expenses and research and development travel expenses offset by increases in depreciation, research and development salaries and wages, investor relation expenses, research and development non-cash stock option and warrant amortization and other tax expenses.

Significant Accounting Policies

We believe our significant accounting policies affect our more significant estimates and judgments used in the preparation of our financial statements. Our Annual Report on Form 10-K for the year ended December 31, 2019 contains a discussion of these significant accounting policies.

Liquidity and Capital Resources

For the three months ended March 31, 2020

During the three months ended March 31, 2020, net cash used in operating activities was \$1,322,249 and net cash used in investing activities was \$13,504, which was due primarily to the Company's research and development activities and general and administrative expenditures. Net cash provided by financing activities for the three months ended March 31, 2020 was \$1,127,668. At March 31, 2020, our cash and cash equivalents totaled \$2,028,259, our assets totaled \$6,401,796, our liabilities totaled \$1,704,774, and we had stockholders' equity of \$4,697,022.

For the three months ended March 31, 2019

During the three months ended March 31, 2019, net cash used in operating activities was \$1,146,584 and net cash used in investing activities was \$54,948, which was due primarily to the Company's research and development activities and general and administrative expenditures. Net cash provided by financing activities for the three months ended March 31, 2019 was \$1,312,538. At March 31, 2019, our cash and cash equivalents totaled \$2,285,631, our assets totaled \$6,121,273, our liabilities totaled \$1,308,838, and we had stockholders' equity of \$4,812,435.

Sources and Uses of Cash

Our future expenditures and capital requirements will depend on numerous factors, including: the progress of our research and development efforts; the rate at which we can, directly or through arrangements with original equipment manufacturers, introduce and sell products incorporating our polymer materials technology; the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; market acceptance of our products and competing technological developments; and our ability to establish cooperative development, joint venture and licensing arrangements. We expect that we will incur approximately \$586,000 of expenditures per month over the next 12 months.

Subject to any additional impact of the COVID-19 pandemic, we expect our Lincoln Park financing (described below) to provide us with sufficient funds to maintain our operations over that period of time. However, any additional funds provided by our Lincoln Park financing may not be available on terms that are acceptable to us, or at all. Market volatility resulting from the COVID-19 pandemic or other factors could adversely impact our ability to access capital as and when needed. If adequate funds are not available to us on a timely basis, we may be required to delay or limit our operations, including research and development efforts relating to the commercializing our electro-optic polymer technology. Our current cash position enables us to finance our operations through August 2020 before we will be required to replenish our cash reserves pursuant to the Lincoln Park financing. Our cash requirements are expected to increase at a rate consistent with the Company's path to revenue growth as we expand our activities and operations with the objective of commercializing our electro-optic polymer technology. We currently have no debt to service other than the loan under the Paycheck Protection Program (described below), the majority of which the Company expects to be forgiven pursuant to loan forgiveness standards currently in effect.

On January 21, 2019, our Company entered into the Purchase Agreement with Lincoln Park, pursuant to which Lincoln Park agreed to purchase from us up to \$25,000,000 of our Common Stock (subject to certain limitations) from time to time over a 36-month period. Pursuant to the Purchase Agreement, Lincoln Park is obligated to make purchases as the Company directs in accordance with the Purchase Agreement, which may be terminated by the Company at any time, without cost or penalty. Sales of shares will be made in specified amounts and at prices that are based upon the market prices of our Common Stock immediately preceding the sales to Lincoln Park. We expect this financing to provide us with sufficient funds to maintain our operations for the foreseeable future. With the additional capital, we expect to achieve a level of revenues attractive enough to fulfill our development activities and adequate enough to support our business model for the foreseeable future. We cannot assure you that we will meet the conditions of the Purchase Agreement with Lincoln Park in order to obligate Lincoln Park to purchase our shares of common stock. In the event we fail to do so, and other adequate funds are not available to satisfy long-term capital requirements, or if planned revenues are not generated, we may be required to substantially limit our operations. This limitation of operations may include reductions in capital expenditures and reductions in staff and discretionary costs.

There are no trading volume requirements or restrictions under the Purchase Agreement, and we will control the timing and amount of any sales of our Common Stock to Lincoln Park. Lincoln Park has no right to require any sales by us, but is obligated to make purchases from us as we direct in accordance with the Purchase Agreement. We can also accelerate the amount of Common Stock to be purchased under certain circumstances. There are no limitations on use of proceeds, financial or business covenants, restrictions on future funding, rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. Lincoln Park may not assign or transfer its rights and obligations under the purchase agreement.

On April 23, 2020, the Company received \$410,700 in loan funding from the Paycheck Protection Program, established pursuant to the recently enacted Coronavirus Aid, Relief, and Economic Security Act and administered by the U.S. Small Business Administration. The unsecured loan is evidenced by a promissory note of the Company dated April 23, 2020 in the principal amount of \$410,700, to Community Banks of Colorado, a division of NBH Bank, the lender.

We expect that our cash used in operations will continue to increase during 2020 and beyond as a result of the following planned activities:

- The addition of management, sales, marketing, technical and other staff to our workforce;
- Increased spending for the expansion of our research and development efforts, including purchases of additional laboratory and production equipment;
- Increased spending in marketing as our products are introduced into the marketplace;
- Developing and maintaining collaborative relationships with strategic partners;
- Developing and improving our manufacturing processes and quality controls; and
- Increases in our general and administrative activities related to our operations as a reporting public company and related corporate compliance requirements.

Analysis of Cash Flows

For the three months ended March 31, 2020

Net cash used in operating activities was \$1,322,249 for the three months ended March 31, 2020, primarily attributable to the net loss of \$1,827,174 adjusted by \$26,924 in warrants issued for services, \$206,437 in options issued for services, \$31,008 in common stock issued for services, \$199,171 in depreciation expenses and patent amortization expenses, (\$8,877) in prepaid expenses and \$50,262 in accounts payable and accrued expenses. Net cash used in operating activities consisted of payments for research and development, legal, professional and consulting expenses, rent and other expenditures necessary to develop our business infrastructure.

Net cash used by investing activities was \$13,504 for the three months ended March 31, 2020, consisting of \$8,149 in cost for intangibles and \$5,355 in asset additions primarily for the new Colorado headquarter facility and labs.

Net cash provided by financing activities was \$1,127,668 for the three months ended March 31, 2020 and consisted of \$1,352,113 in proceeds from resale of common stock to an institutional investor offset by \$224,445 repayment of equipment purchased.

For the three months ended March 31, 2019

Net cash used in operating activities was \$1,146,584 for the three months ended March 31, 2019, primarily attributable to the net loss of \$2,018,778 adjusted by \$18,827 in warrants issued for services, \$187,383 in options issued for services, \$298,356 in common stock issued for services, \$138,832 in depreciation expenses and patent amortization expenses, \$242,535 in prepaid expenses and (\$13,739) in accounts payable and accrued expenses. Net cash used in operating activities consisted of payments for research and development, legal, professional and consulting expenses, rent and other expenditures necessary to develop our business infrastructure.

Net cash used by investing activities was \$54,948 for the three months ended March 31, 2019, consisting of \$11,810 in cost for intangibles and \$43,138 in asset additions primarily for the new Colorado headquarter facility.

Net cash provided by financing activities was \$1,312,538 for the three months ended March 31, 2019 and consisted of \$1,419,585 in proceeds from resale of common stock to an institutional investor offset by \$107,047 repayment of equipment purchased.

Contractual Obligations

There have been no material changes outside the ordinary course of business in our contractual commitments during the three months ended March 31, 2020.

Off-Balance Sheet Arrangements

As of March 31, 2020, we do not have an interest in any off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures, or capital resources that is material to investors.

Item 4 Controls and Procedures

Evaluation of Disclosure Controls and Procedures. The Company's management, with the participation of the Company's Principal Executive Officer and Principal Financial Officer, evaluated the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) as of March 31, 2020. Based on this evaluation, the Company's Principal Executive Officer and Principal Financial Officer concluded that, as of March 31, 2020 the Company's disclosure controls and procedures were effective, in that they provide reasonable assurance that information required to be disclosed by the Company in the reports that it files or submits under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and is accumulated and communicated to the Company's management, including the Company's Principal Executive Officer and Principal Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting. There were no changes in our internal control over financial reporting during the quarter ended March 31, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1A Risk Factors

The following risk factors supplement the Risk Factors described in the Company's annual report on Form 10-K for the year ended December 31, 2019 and should be read in conjunction therewith.

Our operations and financial results could be adversely impacted by the COVID-19 pandemic, which has negatively impacted our stock price and could curtail our ability to raise necessary funds in the near-term on terms that are acceptable to us, and may negatively impact our business, results of operations, particularly with respect to our research and development, and financial position.

As a result of the COVID-19 global pandemic, many countries, including the United States, have declared national emergencies and have implemented preventive measures by limiting large public gatherings (social distancing) and shelter-in-place mandates. Many employers are restricting non-essential work travel and are requiring that employees work from their homes to limit personal interaction. Many businesses are closed or are operating in a substantially reduced fashion and many employees have been laid off. While the extent of the impact of the COVID-19 pandemic on our business and financial results is uncertain, a continued and prolonged public health crisis such as the COVID-19 pandemic would have a negative impact on our business, results of operations, particularly with respect to our research and development, and financial condition. The COVID-19 pandemic has resulted in significant volatility and substantial declines in the stock markets, which has negatively impacted our stock price and negatively impacted our ability to raise significant funds in the near-term on terms that are acceptable to us. It is unknown the potential impact in the long-term in the event of a prolonged disruption or recession. In addition, the COVID-19 pandemic could impact the conduct of our research and development due to the slowdown or stoppage of modulator and materials development at our laboratory facility. Given the dynamic nature of these circumstances, the duration of any business disruption or potential impact of the COVID-19 pandemic to our business is difficult to predict.

The extent to which the COVID-19 pandemic will adversely impact our business, financial condition and results of operations is highly uncertain and cannot be predicted.

The COVID-19 pandemic has created significant worldwide uncertainty, volatility and economic disruption. The extent to which COVID-19 will adversely impact our business, financial condition and results of operations is dependent upon numerous factors, many of which are highly uncertain, rapidly changing and uncontrollable. These factors include, but are not limited to: (i) the duration and scope of the pandemic; (ii) governmental, business and individual actions that have been and continue to be taken in response to the pandemic, including travel restrictions, quarantines, social distancing, work-from-home and shelter-in-place orders and shut-downs; (iii) the impact on U.S. and global economies and the timing and rate of economic recovery; (iv) potential adverse effects on the financial markets and access to capital; (v) potential goodwill or other impairment charges; (vi) increased cybersecurity risks as a result of pervasive remote working conditions; (vii) our ability to effectively carry out our operations due to any adverse impacts on the health and safety of our employees and their families; and (viii) the ability of our collaborative partners to timely satisfy their collaborative obligations to us.

Item 6 Exhibits

The following exhibits are included herein:

<u>Exhibit No.</u>	<u>Description of Exhibit</u>	<u>Location</u>
31.1	Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, executed by the Principal Executive Officer of the Company.	Filed herewith
31.2	Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, executed by the Principal Financial Officer of the Company.	Filed herewith
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, executed by the Principal Executive Officer of the Company.	Filed herewith
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, executed by the Principal Financial Officer of the Company.	Filed herewith
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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.

LIGHTWAVE LOGIC, INC.

Registrant

By: /s/ Michael S. Lebby
Michael S. Lebby,
Chief Executive Officer
(Principal Executive Officer)

Date: May 11, 2020

By: /s/ James S. Marcelli
James S. Marcelli,
President, Chief Operating Officer
(Principal Financial Officer)

Date: May 11, 2020

CERTIFICATION

I, Michael S. Lebby, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Lightwave Logic, 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 11, 2020

/s/ Michael S. Lebby
Michael S. Lebby,
Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION

I, James S. Marcelli, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Lightwave Logic, 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 11, 2020

/s/ James S. Marcelli
James S. Marcelli,
President, Chief Operating Officer
(Principal Financial Officer)

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

In connection with the Quarterly Report on Form 10-Q of Lightwave Logic, Inc. (the "Company") for the period ending March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael S. Lebby, Chief Executive Officer of our Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that, to my knowledge:

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 our Company.

Date: May 11, 2020

/s/ Michael S. Lebby
Michael S. Lebby,
Chief Executive Officer
(Principal Executive Officer)

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

In connection with the Quarterly Report on Form 10-Q of Lightwave Logic, Inc. (the "Company") for the period ending March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, James S. Marcelli, Chief Operating Officer of our Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that, to my knowledge:

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 our Company.

Date: May 11, 2020

/s/ James S. Marcelli
James S. Marcelli,
President, Chief Operating Officer
(Principal Financial Officer)