

NANOPHASE TECHNOLOGIES Corp

Form 10-Q

August 12, 2016

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-Q

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

For the Quarterly Period Ended: June 30, 2016

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: 000-22333

Nanophase Technologies Corporation

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)
36-3687863
(I.R.S. Employer
Identification No.)
1319 Marquette Drive, Romeoville, Illinois 60446
(Address of principal executive offices, and zip code)
Registrant's telephone number, including area code: (630) 771-6708

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 and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "accelerated filer", "large accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

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

As of August 5, 2016, there were 31,185,496 shares outstanding of common stock, par value \$.01, of the registrant.

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NANOPHASE TECHNOLOGIES CORPORATION

QUARTER ENDED JUNE 30, 2016

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Table of Contents**PART I - FINANCIAL INFORMATION****Item 1. Financial Statements****NANOPHASE TECHNOLOGIES CORPORATION****BALANCE SHEETS**

	(in thousands except share and per share data)	
	June 30,	December 31,
	2016	2015
	(Unaudited)	
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 1,424	\$ 1,275
Trade accounts receivable, less allowance for doubtful accounts of \$6 on June 30, 2016 and December 31, 2015	1,704	507
Inventories, net	597	662
Prepaid expenses and other current assets	443	247
Total current assets	4,168	2,691
Equipment and leasehold improvements, net	1,579	1,861
Other assets, net	21	22
	\$ 5,768	\$ 4,574
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Current portion of capital lease obligations	\$ 97	\$ 94
Accounts payable	638	508
Accrued expenses	480	276
Total current liabilities	1,215	878
Long-term portion of capital lease obligations	95	144
Long-term deferred rent	494	519
Asset retirement obligations	175	172
Total long-term liabilities	764	835
Stockholders equity:		
Preferred stock, \$.01 par value, 24,088 shares authorized and no shares issued and outstanding	312	286

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Common stock, \$.01 par value, 35,000,000 shares authorized; 31,185,496 and 28,585,496 shares issued and outstanding on June 30, 2016 and December 31, 2015, respectively		
Additional paid-in capital	97,222	96,172
Accumulated deficit	(93,745)	(93,597)
Total stockholders' equity	3,789	2,861
	\$ 5,768	\$ 4,574

See Notes to Financial Statements.

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	Three months ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Revenue:				
Product revenue	\$ 3,678	\$ 2,921	\$ 5,867	\$ 5,221
Other revenue	5	16	27	27
Total revenue	3,683	2,937	5,894	5,248
Operating expense:				
Cost of revenue	2,170	1,945	3,925	3,690
Gross profit	1,513	992	1,969	1,558
Research and development expense	372	343	673	645
Selling, general and administrative expense	675	739	1,436	1,606
Income/(loss) from operations	466	(90)	(140)	(693)
Interest income				
Interest expense	(3)	(3)	(8)	(6)
Other, net				
Income/(loss) before provision for income taxes	463	(93)	(148)	(699)
Provisions for income taxes				
Net income/(loss)	\$ 463	\$ (93)	\$ (148)	\$ (699)
Net income/(loss) per share basic and diluted	\$ 0.01	\$ (0.00)	\$ (0.00)	\$ (0.02)
Weighted average number of basic and diluted common shares outstanding	31,185,496	28,585,496	30,599,782	28,564,133

See Notes to Financial Statements.

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NANOPHASE TECHNOLOGIES CORPORATION

STATEMENTS OF CASH FLOWS

(Unaudited)

(in thousands)

	Six months ended June 30,	
	2016	2015
Operating activities:		
Net loss	\$ (148)	\$ (699)
Adjustment to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	361	366
Stock compensation expense	88	94
Changes in assets and liabilities related to operations:		
Trade accounts receivable	(1,197)	(1,202)
Inventories	65	415
Prepaid expenses and other assets	(195)	80
Accounts payable	156	201
Accrued expenses	178	(4)
Net cash used in operating activities	(692)	(749)
Investing activities:		
Acquisition of equipment and leasehold improvements	(63)	(184)
Payment of accounts payable incurred for the purchase of equipment and leasehold improvements	(37)	(8)
Net cash used in investing activities	(100)	(192)
Financing activities:		
Principal payments on capital leases	(47)	(41)
Proceeds from line of credit		250
Proceeds from common stock issuance	988	
Proceeds from exercise of stock options		26
Net cash provided by financing activities	941	235
Increase/(Decrease) in cash and cash equivalents	149	(706)
Cash and cash equivalents at beginning of period	1,275	1,862
Cash and cash equivalents at end of period	\$ 1,424	\$ 1,156
Supplemental cash flow information:		
Interest paid	\$ 8	\$ 6

Supplemental non-cash investing activities:

Accounts payable incurred for the purchase of equipment and leasehold improvements	\$	11	\$	65
Capital lease obligations incurred in the purchase of equipment	\$		\$	65

See Notes to Financial Statements.

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NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS

(Unaudited)

(in thousands, except share and per share data or as otherwise noted herein)

(1) Basis of Presentation

The accompanying unaudited interim financial statements of Nanophase Technologies Corporation (Nanophase or the Company , including we , our or us) reflect all adjustments (consisting of normal recurring adjustments) which, in the opinion of management, are necessary for a fair presentation of our financial position and operating results for the interim periods presented. Operating results for the three and six months ended June 30, 2016 are not necessarily indicative of the results that may be expected for the year ending December 31, 2016.

These financial statements should be read in conjunction with our audited financial statements and notes thereto for the year ended December 31, 2015, included in the Company's Annual Report on Form 10-K for the year ended December 31, 2015, as filed with the Securities and Exchange Commission.

(2) Description of Business

Nanophase is an advanced materials and applications developer and commercial manufacturer with an integrated family of nanomaterial and related technologies. We produce engineered nano and larger, sub-micron, materials for use in a variety of diverse markets: personal care including sunscreens, architectural coatings, industrial coating applications, abrasion-resistant additives, plastics additives, medical diagnostics, energy, and a variety of surface finishing technologies (polishing) applications. We target markets in which we believe practical solutions may be found using our products. We work closely with current and potential customers in these target markets to identify their material and performance requirements and market our materials to various end-use applications manufacturers. Recently developed technologies have made certain new products possible and opened potential new markets. We recently developed new material solutions in the personal care, surface finishing technologies (polishing) and energy-management areas that have been taken to potential customers, and for which we are experiencing early stage revenue. Although our primary strategic focus has been the North American market, we currently sell material to customers overseas and have been working to expand our reach within foreign markets.

The Company was incorporated in Illinois on November 25, 1989, and became a Delaware corporation in November 1997. Our common stock trades on the OTCQB marketplace under the symbol NANX.

While product sales comprise the overwhelming majority of our revenue, we also recognize revenue from other sources from time to time. These activities are not expected to drive the long-term growth of the business. For this reason we classify such revenue as other revenue in our Statements of Operations, as it does not represent revenue directly from our nanocrystalline materials.

(3) Financial Instruments

We follow the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 820, *Fair Value Measurements and Disclosures*, which defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. The fair value framework requires the categorization of

assets and liabilities into three levels based upon the assumptions (inputs) used to price the assets or liabilities. Level 1 provides the most reliable measure of fair value, whereas Level 3 generally requires significant management judgment.

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Our financial instruments include cash and cash equivalents, accounts receivable, accounts payable and accrued expenses, along with the promissory note with no related borrowings and any borrowings on the working capital line of credit, each described in Note 4. The fair values of all financial instruments were not materially different from their carrying values. There were no financial assets or liabilities adjusted to fair value on June 30, 2016 or December 31, 2015.

(4) Notes

During July 2014, we entered into a bank-issued letter of credit and related promissory note for up to \$30 in borrowings to support our obligations under our facility lease agreement. No borrowings have been incurred under this promissory note. Should any borrowings occur in the future, the interest rate would be the prime rate plus 1%, with the bank having the right to set off or apply unpaid balances against our checking account if we fail to meet our obligations under any borrowings under the note. We have renewed this note annually and it is our intention to continue to do so for as long as we need to pursuant to the terms of our facility lease agreement. Because there were no amounts outstanding at any time during 2016 or 2015, we have recorded no related liability on our balance sheet.

During March 2015, we entered into a Business Loan Agreement (the Line of Credit Agreement) with Libertyville Bank and Trust Company, a Wintrust Community Bank (Libertyville), our primary bank, which was subsequently amended on April 13, 2015. Under the Line of Credit Agreement, as amended, Libertyville will provide a maximum of \$300, or 75% of our eligible accounts receivable, whichever is less, of revolving credit, collateralized by a senior priority lien on our accounts receivable, inventory, equipment, general intangibles and fixtures. Interest on any borrowings would be the prime rate at the time plus 1%. We must have at least \$1 million in cash, including any amounts borrowed, at Libertyville on the date of any advance. Advances may only occur at the beginning or end of a fiscal quarter and must be repaid in full within five days of the advance. The Line of Credit Agreement was extended during March 2016, and now expires on March 4, 2017. There were two advances under this Line of Credit Agreement during 2015 that were subsequently repaid within five days of each advance, and no advances during the first six months of 2016.

(5) Inventories

Inventories consist of the following:

	June 30, 2016	December 31, 2015
Raw materials	\$ 254	\$ 184
Finished goods	395	530
	649	714
Allowance for excess inventory quantities	(52)	(52)
	\$ 597	\$ 662

(6) Share-Based Compensation

We follow FASB ASC Topic 718, *Compensation – Stock Compensation*, in which compensation expense is recognized only for share-based payments expected to vest. We recognized compensation expense related to stock options of \$41 and \$88 for the three and six month periods ended June 30, 2016, respectively, compared to \$47 and \$94 for the three

and six month periods ended June 30, 2015, respectively.

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As of June 30, 2016, there was approximately \$258 of total unrecognized compensation cost related to nonvested share-based compensation arrangements granted under our stock option plans. That cost is expected to be recognized over a remaining weighted-average period of 2.0 years.

Stock Options and Stock Grants

During the six months ended June 30, 2016, no stock options were exercised. During the six months ended June 30, 2015, 69,333 shares of common stock were issued pursuant to stock option exercises for proceeds of \$26. During the six months ended June 30, 2016, 419,390 stock options were granted compared to 446,100 stock options granted during the same period in 2015. During the six months ended June 30, 2016, 15,000 stock options were forfeited compared to 182,534 stock options forfeited during the same period in 2015. We had 2,978,000 stock options outstanding at a weighted average exercise price of \$0.87 on June 30, 2016, compared to 2,574,000 stock options outstanding at a weighted average exercise price of \$0.95 on December 31, 2015.

The following table illustrates the various assumptions used to calculate the Black-Scholes option pricing model for stock options granted during the periods presented:

	June 30, 2016	June 30, 2015
For the three months ended		
Weighted-average risk-free interest rates:		
Dividend yield:		
Weighted-average expected life of the option:		
Weighted-average expected stock price volatility:		
Weighted-average fair value of the options granted:		
For the six months ended		
Weighted-average risk-free interest rates:	1.43%	1.74%
Dividend yield:		
Weighted-average expected life of the option:	7 Years	7 Years
Weighted-average expected stock price volatility:	95%	95%
Weighted-average fair value of the options granted:	\$ 0.34	\$ 0.44

Stock Appreciation Rights

Prior to 2011, we granted our outside directors stock appreciation rights (SARs). The change in fair value of the awards granted during prior years is included in non-cash compensation expense for the three and six months ended June 30, 2016 and 2015. The SARs granted vested immediately and are payable upon the directors' removal or resignation from the position of director. These awards are accounted for as liability awards, included in accrued expenses as of June 30, 2016 and 2015, and adjusted to fair value each reporting period. The fair value of the liability was less than \$1 on both June 30, 2016 and December 31, 2015.

As of June 30, 2016, we did not have any unvested restricted stock or performance shares outstanding.

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Revenue from three customers constituted approximately 71%, 7% and 6%, respectively, of our total revenue for the three months ended June 30, 2016, and 71%, 4% and 6%, respectively, of our total revenue for the six months ended June 30, 2016. Amounts included in accounts receivable on June 30, 2016 relating to these three customers were approximately \$1,064, \$240 and \$212, respectively. Revenue from these three customers constituted approximately 57%, 0% and 6%, respectively, of our total revenue for the three months ended June 30, 2015, and 58%, 5% and 6%, respectively, of our total revenue for the six months ended June 30, 2015. Amounts included in accounts receivable on June 30, 2015 relating to these three customers were approximately \$858, \$0 and \$174, respectively. The loss of one of these significant customers, a significant decrease in revenue from one or more of these customers, or the failure to attract new customers could have a material adverse effect on our business, results of operations and financial condition.

We currently have exclusive supply agreements with BASF Corporation ("BASF"), our largest customer, that have contingencies outlined which could potentially result in the license of technology and/or the sale of production equipment from the Company to the customer intended to provide capacity sufficient to meet the customer's production needs. This outcome may occur if we fail to meet certain performance requirements, certain other obligations and/or certain financial condition covenants. The financial condition covenants in one of our supply agreements with BASF trigger a technology transfer right (license and equipment sale at BASF's option) in the event (a) that earnings for the twelve month period ending with our most recently published quarterly financial statements are less than zero and our cash, cash equivalents and certain investments are less than \$1 million, or (b) of an acceleration of any debt maturity having a principal amount of more than \$10 million. Our supply agreements with BASF also trigger a technology transfer right in the event of our insolvency, as further defined within the agreements. In the event of an equipment sale, upon incurring a triggering event, the equipment would be sold to the customer at either 115% of the equipment's net book value or the greater of 30% of the original book value of such equipment, and any associated upgrades to it, or 115% of the equipment's net book value, depending on the contract and related equipment.

We believe that we have sufficient cash and credit availability (See Liquidity and Capital Resources in Management's Discussion and Analysis in Part I, Item 2 of this Form 10-Q for a further discussion, as well as the description of our Line of Credit Agreement described in Note 4) to operate our business during 2016. If a triggering event were to occur and BASF elected to proceed with the license and related equipment sale mentioned above, we would receive royalty payments from this customer for products sold using our technology; however, we would lose both significant revenue and the ability to generate significant revenue to replace that which was lost in the near term. Replacement of necessary equipment that could be purchased and removed by the customer pursuant to this triggering event could take in excess of twelve months. Any additional capital outlays required to rebuild capacity would probably be greater than the proceeds from the purchase of the assets as dictated by our agreement with the customer. Similar consequences would occur if we were determined to have materially breached certain other provisions of the supply agreement with BASF. Any such event would also likely result in the loss of many of our key staff and line employees due to economic realities. We believe that our employees are a critical component of our success and it could be difficult to replace them quickly. Given the occurrence of any such event, we might not be able to hire and retain skilled employees given the stigma relating to such an event and its impact on us. Finally, any shortfall in capital needed to operate the business as management intends, including with respect to avoiding this triggering event as described above, may result in a curtailment of certain activities or anticipated investments.

Should events arise that make it appropriate for us to seek additional financing, such additional financing may not be available on acceptable terms or even at all, and any such financing could be dilutive to our stockholders. Such a financing could be necessitated by such things as the loss of one or more significant customers or a significant decline

in revenue from those customers, currently unknown capital requirements, new regulatory requirements, the need to meet cash requirements under our BASF agreement to avoid a triggering event, or other circumstances not currently anticipated by us. The failure to obtain sufficient capital may impair or curtail our business plans and under such circumstances may raise doubt regarding our ability to continue as a going concern.

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(8) Business Segmentation and Geographical Distribution

Revenue from international sources approximated \$351 and \$475 for the three and six months ended June 30, 2016, respectively, compared to \$189 and \$564 for the same periods in 2015. All of this revenue was product revenue.

Our operations comprise a single business segment and all of our long-lived assets are located within the United States.

(9) New Accounting Pronouncements

During May 2014, the FASB issued Accounting Standards Update (ASU) No. 2014-09 (ASU 2014-09), *Revenue from Contracts with Customers*, and several related updates including ASU No. 2016-08 and ASU No. 2016-10, which supersedes nearly all existing revenue recognition guidance under U.S. generally accepted accounting principles. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. Additionally, the guidance requires certain disclosures designed to help users of financial statements better understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. ASU 2014-09 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period, which is our first quarter of 2018. The new standard allows application either retrospectively to each prior reporting period presented or retrospectively as a cumulative-effect adjustment as of the date of adoption. We are evaluating the effect that ASU 2014-09 will have on our financial statements and related disclosures, but do not expect it to have a material impact on our financial position, results of operations, or cash flows.

During February 2016, the FASB issued ASU No. 2016-02 (ASU 2016-02), *Leases (Topic 842)*. This standard requires the recognition of assets and liabilities arising from lease transactions on the balance sheet and the disclosure of key information about leasing arrangements. Accordingly, a lessee will recognize a lease asset for its right to use the underlying asset and a lease liability for the corresponding lease obligation. Both the asset and liability will initially be measured at the present value of the future minimum lease payments over the lease term. Subsequent measurement, including the presentation of expenses and cash flows, will depend on the classification of the lease as either a finance or an operating lease. Initial costs directly attributable to negotiating and arranging the lease will be included in the asset. For leases with a term of 12 months or less, a lessee can make an accounting policy election by class of underlying asset to not recognize an asset and corresponding liability. Lessees will also be required to provide additional qualitative and quantitative disclosures regarding the amount, timing and uncertainty of cash flows arising from leases. These disclosures are intended to supplement the amounts recorded in the financial statements and provide additional information about the nature of an organization's leasing activities. The amendments in this standard are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018, with early adoption permitted. We are currently evaluating the impact its adoption will have on the presentation of our financial statements and related disclosures.

During August 2014, the FASB issued ASU No. 2014-15, *Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern* (ASU 2014-15). ASU 2014-15 will explicitly require management to assess an entity's ability to continue as a going concern, and to provide related footnote disclosure in certain circumstances. The new standard will be effective for all entities in the first annual period ending after December 15, 2016. Earlier adoption is permitted. We do not believe that the adoption will have an impact on the presentation of our financial statements, financial position, results of operations, cash flows and related disclosures.

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During March 2016, the FASB issued ASU No. 2016-09, *Improvements to Employee Share-Based Payment Accounting*, which amends ASC Topic 718, *Compensation - Stock Compensation*. The objective of this update is part of the FASB's Simplification Initiative as it applies to several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The effective date of the update is for fiscal years beginning after December 15, 2016 and interim periods within that reporting period. Early adoption is permitted. We are currently evaluating the impact of this accounting standard but do not believe that the adoption will have a material impact on the presentation of our financial statements, financial position, results of operations, cash flows and related disclosures.

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

Nanophase is an advanced materials and applications developer and commercial manufacturer with an integrated family of materials technologies. We produce engineered nano and sub-micron materials for use in a variety of diverse markets: personal care including sunscreens, architectural coatings, industrial coating applications, abrasion-resistant additives, plastics additives, medical diagnostics, energy, and a variety of surface finishing technologies (polishing) applications, including optics. We target markets in which we believe practical solutions may be found using our products. We work closely with current and potential customers in these target markets to identify their material and performance requirements and market our materials to various end-use applications manufacturers. Recently developed technologies have made certain new products possible and opened potential new markets. For example, we have applied our skills at producing precisely defined nanomaterials to now create and sell larger, sub-micron material products. Our focus is on customer need where we believe we have an advantage, as opposed to finding uses for one particular technology. We expect growth in end-user (manufacturing customers, including customers of our customers) adoption in 2016 and beyond. Our initiatives in targeted market areas are progressing at differing rates of speed, but we have been broadly moving through testing and development cycles, and in a number of cases believe we are approaching first revenue or next stage revenue with particular customers in the industries referenced above. We have recently developed material solutions in the personal care, surface finishing technologies (polishing) and energy-management areas that have been taken to potential customers and for which early stage revenues are occurring. We believe that successful introduction of our materials with manufacturers may lead to follow-on orders for other materials in their applications. We expect that we will both work more deeply with current customers and attract additional customers, which should help us achieve growth in these markets in 2016 and beyond.

Results of Operations

Total revenue increased to \$3,683,000 for the three months ended June 30, 2016, compared to \$2,937,000 for the same period in 2015. Total revenue increased to \$5,894,000 for the six months ended June 30, 2016, compared to \$5,248,000 for the same period of 2015. A substantial majority of our revenue for both periods was from our largest customer in personal care and sunscreen applications. The increase was primarily due to increased volume with this customer during the second quarter of 2016. This increase was partially offset by a reduction in volume with our largest customer in polishing applications during the first half of 2016. Product revenue, the primary component of our total revenue, increased to \$3,678,000 for the three months ended June 30, 2016, compared to \$2,921,000 for the same period in 2015. Product revenue increased to \$5,867,000 for the six months ended June 30, 2016, compared to \$5,221,000 for the same period in 2015. Revenue from our top three customers was approximately 71%, 7% and 6%, respectively, during the three months ended June 30, 2016, compared to

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57%, 0% and 6%, respectively, for the same customers during the same period in 2015. Revenue from our top three customers was approximately 71%, 4% and 6%, respectively, during the six months ended June 30, 2016, compared to 58%, 5% and 6%, respectively, for the same customers during the same period in 2015.

Other revenue was \$5,000 and \$27,000 for the three and six months ended June 30, 2016, compared to \$16,000 and \$27,000 for the same periods in 2015. This was comprised primarily of shipping costs paid by customers, as well as non-recurring project-based fees paid by customers.

Cost of revenue generally includes costs associated with commercial production and customer development arrangements. Cost of revenue increased to \$2,170,000 for the three months ended June 30, 2016, compared to \$1,945,000 for the same period in 2015. Cost of revenue increased to \$3,925,000 for the six months ended June 30, 2016, compared to \$3,690,000 for the same period in 2015. The increases in cost of revenue were primarily driven by the increases in revenue volume. We expect to continue new nanomaterial development, primarily using our NanoArc® synthesis and dispersion technologies, for targeted applications and new markets during 2016 and beyond. At current revenue levels we have generated a positive gross margin, though margins have been impeded by not having enough revenue to efficiently absorb manufacturing overhead that is required to work with current customers and expected future customers. We believe that our current fixed manufacturing cost structure is sufficient to support significantly higher levels of production. The extent to which margins grow, as a percentage of total revenue, will be dependent upon revenue mix, revenue volume, our ability to cut costs and pass commodity market-driven raw materials increases on to customers. We expect that product revenue volume increases would result in our fixed manufacturing costs being more efficiently absorbed, leading to increased margins. We expect to continue to focus on reducing controllable variable product manufacturing costs, with potential variability related to the commodity metals markets, but may or may not realize absolute dollar gross margin growth through 2016 and beyond, dependent upon the factors discussed above.

Research and development expense, which includes all expenses relating to the technology and advanced engineering groups, primarily consists of costs associated with the development or acquisition of new product applications and coating formulations and the cost of enhancing our manufacturing processes. As an example, we have been, and continue to be, engaged in research to enhance our ability to disperse material in a variety of organic and inorganic media for use as coatings and polishing materials. Much of this work has led to several new products and additional potential new products.

Having demonstrated the capability to produce pilot quantities of mixed-metal oxides in a single crystal phase, we do not expect development of further variations on these materials to present material technological challenges. Many of these materials exhibit performance characteristics that can enable them to serve in various catalytic applications. We are now working on several related commercial opportunities using the same materials. We expect that this technique should enable us to scale to large quantity commercial volumes once application viability and firm demand are established. We also have an ongoing advanced engineering effort that is primarily focused on the development of new nanomaterials as well as the refinement of existing nanomaterials, as dictated by our customer-driven marketing strategy. We are not certain when or if any significant revenue will be generated from the production of the materials described above.

Research and development expense was \$372,000 and \$673,000 for the three and six months ended June 30, 2016, compared to \$343,000 and \$645,000 for the same periods in 2015. Research and development expense in 2015 reflected reduced activity as projects were transferred into commercial operations, particularly in surface finishing (polishing). New projects started during 2015 and expanded during 2016 have slightly increased our spend on salaries, materials, external testing, and patent legal fees. We expect quarterly research and development expense for the remainder of 2016 to be consistent with the second quarter of 2016 as we develop and launch new products in the

personal care area.

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Selling, general and administrative expense was \$675,000 and \$1,436,000 for the three and six month periods ended June 30, 2016, compared to \$739,000 and \$1,606,000 for the same periods in 2015. The net changes largely reflect the timing of costs associated with marketing and selling activities. During 2015 we launched new products in the surface finishing (polishing) area, and once completed, had a natural reduction in spending. During the summer of 2016 we started to ramp up cost for consultants and materials as we actively market our personal care and energy solutions to customers. We expect quarterly selling, general and administrative expense to increase by up to 10% from second quarter 2016 levels during the remainder of 2016 as we plan to launch additional products, primarily in personal care.

Inflation

We believe inflation has not had a material effect on our operations or financial position. However, supplier price increases and wage and benefit inflation, both of which represent a significant component of our costs of operations, may have a material effect on our operations and financial position in 2016 and beyond if we are unable to pass through any applicable increases under our present contracts or through to our markets in general.

Liquidity and Capital Resources

Our cash, cash equivalents and short-term investments amounted to \$1,424,000 on June 30, 2016, compared to \$1,275,000 on December 31, 2015 and \$1,156,000 on June 30, 2015. The net cash used in our operating activities was \$692,000 for the six months ended June 30, 2016, compared to \$749,000 for the same period in 2015. The net use of cash during 2016 was driven primarily by a significant increase in accounts receivable at the end of the period related to significant order flow during June 2016. Net cash used in investing activities amounted to \$100,000 for the six months ended June 30, 2016, compared to \$192,000 for the same period in 2015. Capital expenditures amounted to \$63,000 and \$184,000 for the six months ended June 30, 2016 and 2015, respectively. Net cash provided by financing activities was \$941,000 for the six months ended June 30, 2016, compared to \$235,000 for the six months ended June 30, 2015, as we sold 2.6 million shares of our common stock to our largest stockholder on February 10, 2016 for \$988,000 in proceeds. We have used, and intend to continue to use, the proceeds from the sale of shares for working capital and general corporate purposes. On June 29, 2015, we borrowed \$250,000 on our working capital line of credit, repaying that amount on July 3, 2015. We also entered into \$65,000 of capital leases during the second quarter of 2015 related to the purchase of capital equipment. We had no new capital leases during the first six months of 2016, but expect to enter into one or more capital leases during the second half of 2016.

Our supply agreements with our largest customer, BASF, contain certain financial covenants which could potentially impact our liquidity. The most restrictive financial covenants under these agreements require that we maintain a minimum of \$1 million in cash, cash equivalents and certain investments, and that we not have the acceleration of any debt maturity having a principal amount of more than \$10 million, in order to avoid triggering the customer's potential right to transfer certain technology and equipment to that customer at a contractually defined price. We had approximately \$1.4 million in cash and cash equivalents on June 30, 2016, with no outstanding debt. This supply agreement and its covenants are more fully described in Note 7, and our line of credit is more fully described in Note 4, to our Financial Statements in Part I, Item 1 of this Form 10-Q.

We believe that cash from operations and cash, cash equivalents and unused borrowing capacity will be adequate to fund our operating plans through 2016. Our actual future capital requirements in 2016 and beyond will depend, however, on many factors, including customer acceptance of our current and potential nanomaterials and product applications, continued progress in research and development activities and product testing programs, the magnitude of these activities and programs, and the costs necessary to increase and expand our manufacturing capabilities and to market and sell our materials and product applications. Other important issues that will drive future capital requirements will be the

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development of new markets and new customers as well as the potential for significant unplanned growth with existing customers. Depending on the success of certain projects, we expect that capital spending relating to currently known capital needs for the remainder of 2016 will be between \$150,000 and \$250,000. If those projects are delayed or ultimately prove unsuccessful, we would expect our capital requirements to be lower. If other projects are successful, the total capital spending may be higher than \$250,000 for the remainder of 2016.

Should events arise that make it appropriate for us to seek additional financing, such additional financing may not be available on acceptable terms or even at all, and any such additional financing could be dilutive to our stockholders. Such financing could be necessitated by such things as: the loss of one or more existing customers or a significant decrease in revenue from those customers; currently unknown capital requirements in light of the factors described above; new regulatory requirements that are outside our control; the need to meet previously discussed cash requirements to avoid a triggering event under our BASF agreements; or various other circumstances coming to pass that we currently do not anticipate. The failure to obtain sufficient capital to fund our business plans may result in a curtailment or other change in those plans, and under such circumstances may raise doubt as to our ability to continue as a going concern.

On June 30, 2016, we had a net operating loss carryforward of approximately \$81 million for income tax purposes. Because we may have experienced ownership changes within the meaning of the U.S. Internal Revenue Code in connection with our various prior equity offerings, future utilization of this carryforward may be subject to certain limitations as defined by the Internal Revenue Code. If not utilized, the carryforward will expire at various dates between January 1, 2018 and December 31, 2035. As a result of the annual limitation and uncertainty as to the amount of future taxable income that will be earned prior to the expiration of the carryforward, we have concluded that it is likely that some portion of this carryforward will expire before ultimately becoming available to reduce income tax liabilities.

Changes in Illinois state law that began in 2011 will impact net loss carryforward duration and utilization on the state tax level.

Off-Balance Sheet Arrangements

We have not created, and are not party to, any special-purpose or off-balance sheet entities for the purposes of raising capital, incurring debt or operating our business. We do not have any off-balance sheet arrangements or relationships with entities that are not consolidated into our financial statements that are reasonably likely to materially affect our liquidity or the availability of capital resources.

As more fully described in Note 4 to our Financial Statements, in Part I, Item I of this Form 10-Q, during 2014 we entered into a letter of credit and promissory note for up to \$30,000 supporting our obligations under our facility lease agreement. No borrowings have been incurred under this promissory note.

Safe Harbor Provision

We want to provide investors with more meaningful and useful information. As a result, this Quarterly Report on Form 10-Q (the "Form 10-Q") contains and incorporates by reference certain forward-looking statements, as defined in Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements reflect our current expectations of the future results of our operations, performance and achievements. Forward-looking statements are covered under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. We have tried, wherever possible, to identify these statements by using words such as "anticipates", "believes", "estimates", "expects", "plans", "intends" and similar expressions. These statements reflect management's current

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beliefs and are based on information now available to it. Accordingly, these statements are subject to certain risks, uncertainties and contingencies that could cause our actual results, performance or achievements in future reporting periods to differ materially from those expressed in, or implied by, such statements. These risks, uncertainties and factors include, without limitation: our ability to be consistently profitable despite the losses we have incurred since our incorporation; a decision by a customer to cancel a purchase order or supply agreement in light of our dependence on a limited number of key customers; the terms of our supply agreements with BASF, which could trigger a requirement to transfer technology and/or sell equipment to that customer; our potential inability to obtain working capital when needed on acceptable terms or at all; our ability to obtain materials at costs we can pass through to our customers; uncertain demand for, and acceptance of, our nanocrystalline materials; our manufacturing capacity and product mix flexibility in light of customer demand; our limited marketing experience; changes in development and distribution relationships; the impact of competitive products and technologies; our dependence on patents and protection of proprietary information; the resolution of litigation or other legal proceedings in which we may become involved; our ability to maintain an appropriate electronic trading venue for our securities; and the impact of any potential new governmental regulations that could be difficult to respond to or costly to comply with. In addition, our forward-looking statements could be affected by general industry and market conditions and growth rates. Readers of this Quarterly Report on Form 10-Q should not place undue reliance on any forward-looking statements. Except as required by federal securities laws, we undertake no obligation to update or revise these forward-looking statements to reflect new events or uncertainties.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Not required for a smaller reporting company.

Item 4. Controls and Procedures

Disclosure controls

We are responsible for establishing and maintaining disclosure controls and procedures that are designed to ensure that information required to be disclosed by us in the reports filed by us under the Exchange Act is: (a) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms; and (b) accumulated and communicated to our management, including our principal executive and principal financial officers, to allow timely decisions regarding required disclosures. It should be noted that in designing and evaluating our disclosure controls and procedures, we recognize that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and that our management necessarily was required to apply its judgment regarding the design of our disclosure controls and procedures. As of the end of the period covered by this report, we conducted an evaluation, under the supervision (and with the participation) of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures pursuant to Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at reaching that level of reasonable assurance.

Internal control over financial reporting

The Company's management, including the CEO and CFO, confirm that there was no change in the Company's internal control over financial reporting during the period covered by this report that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

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PART II OTHER INFORMATION

Item 1. Legal Proceedings

We are not a party to any pending legal proceedings or claims that we believe will result in a material adverse effect on our business, financial condition, or operating results.

Item 1A. Risk Factors

In addition to the information set forth in this Quarterly Report on Form 10-Q and before deciding to invest in, or retain, shares of our common stock, you also should carefully review and consider the information contained in our other reports and periodic filings that we make with the Securities and Exchange Commission, including, without limitation, the information contained under the caption Part I, Item 1A Risk Factors in our Annual Report on Form 10-K for the year ended December 31, 2015. Those risk factors could materially affect our business, financial condition and results of operations. Additional risks and uncertainties that we do not currently know about, we currently believe are immaterial or we have not predicted may also harm our business operations or adversely affect us. If any of these risks or uncertainties actually occurs, our business, financial condition, results of operations, cash flows or stock price could be materially adversely affected. There have been no material changes from the risk factors previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2015.

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

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

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|--------------|--|
| Exhibit 31.1 | Certification of Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act. |
| Exhibit 31.2 | Certification of Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act. |
| Exhibit 32 | Certification of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350. |

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Exhibit 101 The following materials from Nanophase Technologies Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016, formatted in XBRL (Extensible Business Reporting Language): (1) the Balance Sheets, (2) the Statements of Operations, (3) the Statements of Cash Flows, and (4) the Notes to Unaudited Financial Statements.

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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.

NANOPHASE TECHNOLOGIES CORPORATION

Date: August 12, 2016

By: /s/ JESS A. JANKOWSKI
Jess A. Jankowski
President and Chief Executive Officer

Date: August 12, 2016

By: /s/ FRANK J. CESARIO
Frank J. Cesario
Chief Financial Officer