

NANOPHASE TECHNOLOGIES CORPORATION

Form 10-Q

November 09, 2011

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**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**Form 10-Q**

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

For the Quarterly Period Ended: September 30, 2011

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** **36-3687863**  
(State or other jurisdiction of **(I.R.S. Employer**  
**incorporation or organization)** **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 November 5, 2011, there were 21,208,162 shares outstanding of common stock, par value \$.01, of the registrant.

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**NANOPHASE TECHNOLOGIES CORPORATION**

**QUARTER ENDED SEPTEMBER 30, 2011**

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

|  | <b>September 30,<br/>2011<br/>(Unaudited)</b> | <b>December 31,<br/>2010</b> |
|--|---|------------------------------|
| <b>ASSETS</b>  |   |                              |
| <b>Current assets:</b>   |   |                              |
| Cash and cash equivalents  | \$ 3,316,440                                  | \$ 5,744,322                 |
| Investments  | 30,000  | 30,000                       |
| Trade accounts receivable, less allowance for doubtful accounts of \$6,000 on September 30, 2011 and \$3,000 on December 31, 2010, respectively                                    | 1,092,319                                     | 765,250                      |
| Other receivables  | 91,120  | 14,260                       |
| Inventories, net   | 1,685,023                                     | 1,825,882                    |
| Prepaid expenses and other current assets  | 420,209                                       | 346,926                      |
| <b>Total current assets</b>  | <b>6,635,111</b>                              | <b>8,726,640</b>             |
| Equipment and leasehold improvements, net  | 3,963,091                                     | 4,721,672                    |
| Other assets, net  | 32,941  | 34,799                       |
|  | <b>\$ 10,631,143</b>                          | <b>\$ 13,483,111</b>         |
| <b>LIABILITIES AND STOCKHOLDERS EQUITY</b>   |   |                              |
| <b>Current liabilities:</b>  |   |                              |
| Current portion of capital lease obligations   |   | 748                          |
| Accounts payable   | 549,952                                       | 918,527                      |
| Accrued expenses   | 459,269                                       | 1,047,509                    |
| Accrued discount liability   | 171,560                                       | 296,235                      |
| <b>Total current liabilities</b>   | <b>1,180,781</b>                              | <b>2,263,019</b>             |
| Long-term deferred rent  | 644,434                                       | 635,523                      |
| Asset retirement obligations   | 146,692                                       | 141,407                      |
|  | <b>791,126</b>                                | <b>776,930</b>               |
| <b>Contingent liabilities</b>  |   |                              |
| <b>Stockholders equity:</b>  |   |                              |
| Preferred stock, \$.01 par value, 24,088 shares authorized and no shares issued and outstanding  |   |                              |
| Common stock, \$.01 par value, 35,000,000 shares authorized; and 21,208,162 and 21,204,162 shares issued and outstanding on September 30, 2011 and December 31, 2010, respectively | 212,082                                       | 212,042                      |
| Additional paid-in capital   | 92,984,042                                    | 92,674,786                   |
| Accumulated deficit  | (84,536,888)                                  | (82,443,666)                 |
| <b>Total stockholders equity</b>   | <b>8,659,236</b>                              | <b>10,443,162</b>            |
|  | <b>\$ 10,631,143</b>                          | <b>\$ 13,483,111</b>         |

*See Notes to Financial Statements.*

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## NANOPHASE TECHNOLOGIES CORPORATION

## STATEMENTS OF OPERATIONS

(Unaudited)

|  | Three months ended<br>September 30, |                | Nine months ended<br>September 30, |                |
|--|-------------------------------------|----------------|------------------------------------|----------------|
|  | 2011                                | 2010           | 2011                               | 2010           |
| <b>Revenue:</b>                                      |                                     |                |                                    |                |
| Product revenue, net                                 | \$ 2,164,697                        | \$ 1,925,320   | \$ 7,706,487                       | \$ 7,100,265   |
| Other revenue  | 78,217                              | 150,894        | 245,321                            | 315,921        |
| Net revenue  | 2,242,914                           | 2,076,214      | 7,951,808                          | 7,416,186      |
| <b>Operating expense:</b>                            |                                     |                |                                    |                |
| Cost of revenue                                      | 1,894,001                           | 1,602,438      | 5,699,089                          | 5,258,246      |
| Gross profit   | 348,913                             | 473,776        | 2,252,719                          | 2,157,940      |
| Research and development expense                     | 421,597                             | 388,231        | 1,282,618                          | 1,178,306      |
| Selling, general and administrative expense          | 935,857                             | 973,182        | 3,063,446                          | 3,157,824      |
| Agreement termination charges                        |                                     | 700,000        |                                    | 700,000        |
| Loss from operations                                 | (1,008,541)                         | (1,587,637)    | (2,093,345)                        | (2,878,190)    |
| Interest income                                      | 591                                 | 3,580          | 3,929                              | 19,844         |
| Interest expense                                     | (1,965)                             | (515)          | (3,763)                            | (1,768)        |
| Other, net   |                                     | 52             | (43)                               | 3,514          |
| Loss before provision for income taxes               | (1,009,915)                         | (1,584,520)    | (2,093,222)                        | (2,856,600)    |
| Provision for income taxes                           |                                     |                |                                    |                |
| Net loss   | \$ (1,009,915)                      | \$ (1,584,520) | \$ (2,093,222)                     | \$ (2,856,600) |
| Net loss per share basic and diluted                 | \$ (0.05)                           | \$ (0.07)      | \$ (0.10)                          | \$ (0.13)      |
| Weighted average number of common shares outstanding | 21,207,597                          | 21,204,162     | 21,205,320                         | 21,204,162     |

*See Notes to Financial Statements.*

**Table of Contents****NANOPHASE TECHNOLOGIES CORPORATION****STATEMENTS OF CASH FLOWS****(Unaudited)**

|   | <b>Nine months ended September 30,</b> |                     |
|---|--|---------------------|
|   | <b>2011</b>                            | <b>2010</b>         |
| <b>Operating activities:</b>  |  |                     |
| Net loss  | \$ (2,093,222)                         | \$ (2,856,600)      |
| Adjustment to reconcile net loss to net cash used in operating activities:                    |  |                     |
| Depreciation and amortization   | 845,207                                | 868,950             |
| Stock compensation expense  | 251,518                                | 361,579             |
| Allowance for excess inventory quantities   |  | 2,728               |
| Termination charges   |  | 350,000             |
| Changes in assets and liabilities related to operations:                                      |  |                     |
| Trade accounts receivable   | (327,069)                              | 53,331              |
| Other receivables   | (76,860)                               | 448,346             |
| Inventories   | 140,859                                | (358,363)           |
| Prepaid expenses and other current assets   | (73,283)                               | (144,170)           |
| Accounts payable  | (334,392)                              | 391,978             |
| Accrued expenses  | (650,307)                              | 341,672             |
| <b>Net cash used in operating activities</b>  | <b>(2,317,549)</b>                     | <b>(540,549)</b>    |
| <b>Investing activities:</b>  |  |                     |
| Acquisition of equipment and leasehold improvements   | (61,221)                               | (152,169)           |
| Payment of accounts payable incurred for the purchase of equipment and leasehold improvements | (52,444)                               | (10,873)            |
| Purchases of investments  |  | (3,999,502)         |
| Sales of investments  |  | 7,564,106           |
| <b>Net cash (used in) provided by investing activities</b>                                    | <b>(113,665)</b>                       | <b>3,401,562</b>    |
| <b>Financing activities:</b>  |  |                     |
| Principal payments on debt obligations, including capital leases                              | (748)                                  | (6,279)             |
| Proceeds from exercise of stock options   | 4,080                                  |                     |
| <b>Net cash provided by (used in) financing activities</b>                                    | <b>3,332</b>                           | <b>(6,279)</b>      |
| (Decrease) increase in cash and cash equivalents  | (2,427,882)                            | 2,854,734           |
| Cash and cash equivalents at beginning of period  | 5,744,322                              | 3,899,393           |
| <b>Cash and cash equivalents at end of period</b>   | <b>\$ 3,316,440</b>                    | <b>\$ 6,754,127</b> |
| <b>Supplemental cash flow information:</b>  |  |                     |
| Interest paid   | \$ 3,763                               | \$ 1,768            |
| <b>Supplemental non-cash investing activities:</b>  |  |                     |
| Accounts payable incurred for the purchase of equipment and leasehold improvements            | \$ 18,261                              | \$ 74,823           |

*See Notes to Financial Statements.*





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**NANOPHASE TECHNOLOGIES CORPORATION**

**NOTES TO FINANCIAL STATEMENTS**

**(Unaudited)**

**(1) Basis of Presentation**

The accompanying unaudited interim financial statements of Nanophase Technologies Corporation ( Nanophase or the Company , including we or us ) reflect all adjustments (consisting of normal recurring adjustments) which, in the opinion of management, are necessary for a fair presentation of the financial position and operating results of the Company for the interim periods presented. Operating results for the three and nine month periods ended September 30, 2011 are not necessarily indicative of the results that may be expected for the year ending December 31, 2011.

These financial statements should be read in conjunction with the Company s audited financial statements and notes thereto for the year ended December 31, 2010, included in the Company s Annual Report on Form 10-K for the year ended December 31, 2010, as filed with the Securities and Exchange Commission.

**(2) Description of Business**

Nanophase is a nanomaterials developer and commercial manufacturer with an integrated family of nanomaterial technologies. Nanophase produces engineered nanomaterial products for use in a variety of diverse existing and developing markets: sunscreens, personal care, architectural coatings, architectural window cleaning and restoration, industrial coating ingredients, abrasion-resistant applications, plastics additives, medical diagnostics and a variety of polishing applications, including semiconductors and optics. New markets and applications are also being developed. We target markets in which we believe practical solutions may be found using nanoengineered products. We work with leaders in these targeted markets to identify and supply their material and performance requirements. We have applied our technology and developed a complete window cleaning and polishing product family for the Architectural Windows Market under the trade name NanoUltra . The Company was incorporated in Illinois on November 25, 1989, and became a Delaware corporation on November 30, 1997. The Company s common stock trades on the NASDAQ Capital Market under the symbol NANX.

While product sales comprise the majority of our revenue, we also recognize revenue in connection with a technology license and 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**

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. The three levels are defined as follows:

*Level 1:* Unadjusted quoted prices in active markets for identical assets and liabilities.

*Level 2:* Observable inputs other than those included in Level 1. For example, quoted prices for similar assets or liabilities in active markets or quoted prices for identical assets or liabilities in inactive markets.

*Level 3:* Unobservable inputs reflecting management s own assumptions about the inputs used in pricing the asset or liability.

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The Company's financial instruments include cash, accounts receivable, accounts payable and accrued expenses. The fair values of all financial instruments were not materially different from their carrying values.

There are no financial assets or liabilities adjusted to fair value on September 30, 2011 and December 31, 2010, respectively.

**(4) Investments**

Investments on September 30, 2011 and December 31, 2010 were comprised of certificates of deposit in the amount of \$30,000, pledged as collateral, primarily for the Company's rent in 2011 and 2010, and is restricted as to withdrawal or usage. The Company's investments on September 30, 2011 and December 31, 2010 were as follows:

|                         | September 30,<br>2011 | December 31,<br>2010 |
|-------------------------|-----------------------|----------------------|
| Certificates of deposit | \$ 30,000             | \$ 30,000            |
|                         | \$ 30,000             | \$ 30,000            |

**(5) Inventories**

Inventories consist of the following:

|   | September 30,<br>2011 | December 31,<br>2010 |
|---|-----------------------|----------------------|
| Raw materials                             | \$ 672,413            | \$ 878,671           |
| Finished goods                            | 1,072,776             | 1,007,377            |
|   | 1,745,189             | 1,886,048            |
| Allowance for excess inventory quantities | (60,166)              | (60,166)             |
|   | \$ 1,685,023          | \$ 1,825,882         |

**(6) Line of Credit**

The Company has a line of credit with a bank in the amount of \$1 million, secured by certain Company assets. The outstanding balance of our line of credit for the periods ended September 30, 2011 and December 31, 2010 was \$0. This line of credit has no defined termination date and there is no penalty for unused balances.

**(7) Share-Based Compensation**

The Company follows Financial Accounting Standards Board (FASB) Accounting Standards Codification Topic 718, Share-Based Payments, in which compensation expense is recognized only for share-based payments expected to vest. We recognized compensation expense related to stock options of \$102,153 and \$305,216 for the three and nine month periods ended September 30, 2011, compared to \$117,946 and \$322,007 for the same periods in 2010.

As of September 30, 2011, there was approximately \$628,000 of total unrecognized compensation cost related to nonvested share-based compensation arrangements granted under the Company's stock option plans. That cost is expected to be recognized over a remaining weighted-average period of 2.1 years.



**Table of Contents****Employees Stock Options and Stock Grants**

During the nine months ended September 30, 2011, proceeds of \$4,080 were received, and 4,000 shares of common stock were issued pursuant to option exercises compared to none for the same period in 2010. For the nine months ended September 30, 2011, 524,500 stock options were granted compared to 309,300 for the same period in 2010. For the nine months ended September 30, 2011, 126,067 stock options were forfeited, compared to 58,625 for the same period in 2010.

**Stock Appreciation Rights**

During 2010 and 2009, the Company granted its outside directors stock appreciation rights (SARs) totaling 106,750 shares, under the Company's Amended and Restated 2006 Stock Appreciation Rights Plan. For the three and nine month periods ended September 30, 2011, the recovery in valuation of the awards previously granted was (\$51,765) and (\$53,698), respectively, and was included in stock-based compensation expense. The expense recognized in 2010 was \$792 and \$39,572, respectively. The fair value of awards granted during the three and nine months ended September 30, 2010 was \$9,385 and \$26,863, respectively, and was included in stock-based compensation expense for those periods. The SARs granted vested immediately and are payable upon a director's removal or resignation from the position of director. These awards are accounted for as liability awards, included in accrued expenses as of September 30, 2011 and 2010, and adjusted to fair value each reporting period. The fair value of the liability on September 30, 2011 is \$27,459, compared to \$81,157 on December 31, 2010.

In August of 2011, a director resigned, which reduced a potential future liability related to our SAR program and therefore resulted in a portion of the SAR recovery described above.

As of September 30, 2011, the Company does not have any unvested restricted stock or performance shares outstanding.

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

| <b>For the nine months ended</b>                    | <b>September 30,<br/>2011</b> | <b>September 30,<br/>2010</b> |
|---|-------------------------------|-------------------------------|
| Weighted-average risk-free interest rates:          | 2.51%                         | 2.96%                         |
| Dividend yield:                                     |                               |                               |
| Weighted-average expected life of the option:       | 7 Years                       | 7 Years                       |
| Weighted-average expected stock price volatility:   | 74.21%                        | 79.01%                        |
| Weighted-average fair value of the options granted: | \$ 0.89                       | \$ 1.23                       |

**(8) Significant Customers and Contingencies**

Sales to two customers constituted approximately 53% and 22%, respectively, of our total revenue for the three months ended September 30, 2011, and 55% and 22%, respectively, of our total revenue for the nine months ended September 30, 2011. Amounts included in accounts receivable on September 30, 2011 relating to these two customers were approximately \$286,000 and \$249,000, respectively. Revenue from these two customers constituted approximately 63% and 9%, respectively, of our total revenue for the three months ended September 30, 2010, as compared to 66% and 8%, respectively, of our total revenue for the nine months ended September 30, 2010. Amounts included in accounts receivable on September 30, 2010 relating to these two customers were approximately \$351,000 and \$59,000, respectively.

We currently have 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, thus potentially providing capacity sufficient to meet the customer's production needs, from the Company to the customer, if triggered by our failure to meet certain obligations and/or certain financial condition covenants. The financial condition covenants in one of our supply agreements

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with BASF would trigger a technology transfer right (license and, optionally, an equipment sale) in the event (a) that earnings of our twelve month period ending with its most recently published quarterly financial statements are less than zero and our cash, cash equivalents and certain investments are less than \$2,000,000, or (b) of an acceleration of any debt maturity having a principal amount of more than \$10,000,000. 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 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.

We believe that we have sufficient cash, investment balances and line of credit access (See Liquidity and Capital Resources in Management's Discussion and Analysis of Financial Condition and Results of Operations for a further discussion) to avoid the first triggering event under one of the supply agreements with BASF for the rest of 2011 and into 2012. If a triggering event were to occur and BASF elected to proceed with the license and related equipment sale mentioned above, the Company would receive royalty payments from this customer for products sold using the Company's 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 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.

### **(9) Business Segmentation and Geographical Distribution**

Revenue from international sources approximated \$106,000 and \$460,000 for the three and nine months ended September 30, 2011 compared to \$106,000 and \$702,000 for the same periods in 2010. As part of our revenue from international sources, we recognized approximately \$23,000 and \$215,000, respectively, in product revenue from several German companies and \$75,000 and \$225,000, respectively, in other revenue from a technology license fee from a Japanese licensee for the three and nine months ended September 30, 2011. Revenue from these same international sources approximated \$17,000 and \$455,000, respectively, and \$75,000 and \$225,000, respectively, for the same periods in 2010.

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

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

Nanophase is a nanomaterials and applications developer and commercial manufacturer with an integrated family of nanomaterial technologies. Nanophase produces engineered nanomaterials for use in a variety of diverse markets: sunscreens, architectural coatings, industrial coating ingredients, architectural window cleaning and restoration, personal care, abrasion-resistant additives, plastics additives, medical diagnostics and a variety of polishing applications, including semiconductors and optics. We target markets in which we feel practical solutions may be found using nanoengineered 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 expect growth in end-user (manufacturing customers, including customers of customers) adoption as we conclude 2011 and move into 2012, 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. During 2011 we launched our line of abrasion-resistant additives and have been engaged in a large volume of related activity. Abrasion-resistant and polishing applications tend to have shorter testing cycles than other applications such as exterior coatings. We further believe that successful introduction of our materials with manufacturers will more likely lead to follow-on orders for other materials in their applications.

**Results of Operations**

Total revenue increased to \$2,242,914 and \$7,951,808 for the three and nine months ended September 30, 2011, compared to \$2,076,214 and \$7,416,186 for the same periods in 2010. A substantial majority of the revenue for the three and nine month periods ended September 30, 2011 is from our two largest customers. See Note 8 to the Financial Statements for additional information regarding the revenue the Company derived from these customers for the three and nine month periods ended September 30, 2011. Product revenue increased to \$2,164,697 and \$7,706,487 for the three and nine months ended September 30, 2011, compared to \$1,925,320 and \$7,100,265 for the same periods in 2010. The increase in product revenue was primarily attributed to increased revenue from our second largest customer.

Other revenue decreased to \$78,217 and \$245,321 for the three and nine months ended September 30, 2011, compared to \$150,894 and \$315,921 for the same periods in 2010. The decrease in both periods was primarily attributed to recognizing revenue in connection with a research project during the third quarter of 2010.

The majority of the total revenue generated during the three and nine months ended September 30, 2011, resulted from sales to our largest customer in healthcare for sunscreen components, as well as to our largest customer specializing in CMP polishing applications.

We use certain elements classified as Rare Earth elements in some of our processes, specifically cerium oxide in polishing applications. On a worldwide basis, the vast majority of these elements are currently supplied from China. Due to export limitations imposed by China that began during the summer of 2010, the supply of all Rare Earth elements has been drastically reduced during the second half of 2010 and through 2011, as compared to prior periods. This has created significant issues with availability of acceptable materials and, if available, a substantial increase in cost. We have historically been successful in passing material costs through to our customers. While we continue to do so, the supply issue and severity of the price increase will create uncertainty for our polishing business during 2011 and beyond. We have inventory in-house and purchase orders for the remainder of 2011 and first half of 2012 fulfillment related to this line of business, but the long-term success of this area will be directly impacted by the supply and cost of Rare Earth elements, specifically cerium oxide.

Cost of revenue generally includes costs associated with commercial production and customer development arrangements. Cost of revenue increased to \$1,894,001 and \$5,699,089 for the three and nine months ended September 30, 2011, compared to \$1,602,438 and \$5,258,246 for the same periods in 2010. The increase in cost of revenue in both periods was generally attributed to the cerium oxide issue

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above as well as to increased revenue volume, net of efficiencies related to this increase in product flow. We expect to continue new nanomaterial development, primarily using our NanoArc<sup>®</sup> synthesis and dispersion technologies, for targeted applications and new markets through 2011 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 our margins grow, as a percentage of total revenue, will be dependent upon revenue mix, revenue volume, our ability to continue to cut costs and pass commodity market-driven raw materials increases onto customers. As product revenue volume increases, this should result in more of our fixed manufacturing costs being absorbed, leading to increased margins. We expect to continue to focus on reducing controllable variable product manufacturing costs through 2011 and beyond, with potential offsetting increases in the commodity metals markets, but may or may not continue to realize dollar gross margin growth through 2011 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 our 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, as well as polishing products. 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 increased to \$421,597 and \$1,282,618 for the three and nine months ended September 30, 2011, compared to \$388,231 and \$1,178,306 for the same periods in 2010. The increase in research and development expense in both periods was largely attributed to increased salary expenses and new material development. We do not expect research and development expense to increase significantly during the fourth quarter of 2011.

Selling, general and administrative expense decreased to \$935,857 and \$3,063,446 for the three and nine months ended September 30, 2011, compared to \$973,182 and \$3,157,824 for the same periods in 2010. The net decrease for the nine month period was primarily attributed to increases in salary and related expenses being offset by decreased professional fees, as well as stock compensation recovery during 2011.

Interest income decreased to \$591 and \$3,929 for the three and nine months ended September 30, 2011, compared to \$3,580 and \$19,844 for the same periods in 2010. The decrease in both periods was primarily due to decreased investment yields and decreased funds available for investment.

## **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 2011 and beyond, if we are unable to pass through those increases under our present contracts or through to our markets in general.

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### **Liquidity and Capital Resources**

Our cash, cash equivalents and short-term investments amounted to \$3,346,440 on September 30, 2011, compared to \$5,774,322 on December 31, 2010 and \$6,784,127 on September 30, 2010. The net cash used in our operating activities was \$2,317,549 for the nine months ended September 30, 2011, compared to \$540,549 for the same period in 2010, which is a direct result of a significant increase in working capital (approximately \$1.4 million) that is largely the result of the increase in the cost of cerium oxide and the impact that has had throughout our manufacturing and sales processes. We expect a modest working capital benefit for the remainder of 2011. Net cash used in investing activities amounted to \$113,665 for the nine months ended September 30, 2011, compared to \$3,401,562 in cash provided by investing activities for the same period in 2010. Capital expenditures amounted to \$61,221 and \$152,169 for the nine months ended September 30, 2011 and 2010, respectively. Net cash provided by financing activities increased to \$3,332 during the first nine months of 2011 compared to \$6,279 in cash used in financing activities during the first nine months of 2010.

Our supply agreement with our largest customer contains several financial covenants which could potentially impact our liquidity. The most restrictive financial covenants under this agreement require that we maintain a minimum of \$2 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 \$10,000,000, in order to avoid triggering a potential transfer of certain technology and equipment to that customer. We had approximately \$3.3 million in cash, cash equivalents and investments on September 30, 2011, and no debt. This supply agreement and its covenants are more fully described in Note 8 to the Company's Financial Statements.

We believe that cash from operations and cash and cash equivalents, as well as the unutilized credit line, will be adequate to fund our operating plans through the remainder of 2011 and into 2012. Our actual future working capital requirements will depend 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 working capital requirements will be the development of new markets and new customers as well as the potential for significant unplanned growth with existing customers. We expect that capital spending relating to currently known capital needs for the remainder of 2011 will be less than \$100,000.

Should events arise that make it appropriate for us to seek additional financing, such additional financing may not be available on acceptable terms or at all, and any such additional financing could be dilutive to our stockholders. Such a financing could be necessitated by such things as the loss of existing 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 supply agreement; or various other circumstances coming to pass that we currently do not anticipate.

On September 16, 2011, we received notice from the Nasdaq stock market that the closing price of our common stock had fallen below \$1.00 for thirty consecutive days and therefore we were not in compliance with Nasdaq Listing Rule 5550(a)(2). The Nasdaq granted us a 180 day grace period, through March 14, 2012, to regain compliance. Regaining compliance requires a closing bid price at or above \$1.00 for ten consecutive trading days. If we do not regain compliance by March 14, 2012 we may or may not be eligible for an additional extension of time of up to 180 additional days to regain compliance. While we were successful in regaining compliance in 2010 following a similar notice received in December 2009, there is no guarantee that we will be similarly successful now or at any other future date. Failure to regain compliance by the end of any applicable grace periods would result in delisting from Nasdaq. The failure to be listed on an appropriate exchange may negatively impact our ability to access the financial markets.



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On September 30, 2011, we had a net operating loss carryforward of approximately \$84.5 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. A layer of our carryforward expired in 2010 and another will expire in 2011. If not utilized, the remaining carryforward will expire at various dates between January 1, 2012 and December 31, 2031. 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. During 2011, the state of Illinois suspended the utilization of NOL carryforwards for four years, extending their duration by an equivalent number of years.

### **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.

### **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, or similar expressions. These statements reflect management's current 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 become profitable despite the losses we have incurred since our incorporation; our dependence on two principal customers and the terms of our supply agreement 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, including Rare Earth elements, specifically cerium oxide; uncertain demand for, and acceptance of, our nanocrystalline materials; our limited 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; and our ability to protect our patents and proprietary information. 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, the Company undertakes 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.

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### **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 were no changes 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.

## **PART II OTHER INFORMATION**

### **Item 1. Legal Proceedings**

None.

### **Item 1A. Risk Factors**

Not required for a smaller reporting company.

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

None.

### **Item 3. Defaults Upon Senior Securities**

None.

### **Item 4. Removed and Reserved**

### **Item 5. Other Information**

None.



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**Item 6. Exhibits**

- 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.
- Exhibit 101 The following materials from Nanophase Technologies Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2011, 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, tagged as blocks of text.

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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: November 9, 2011

By: /s/ JESS A. JANKOWSKI  
Jess A. Jankowski  
President, Chief Executive Officer (principal executive officer) and a  
Director

Date: November 9, 2011

By: /s/ FRANK J. CESARIO  
Frank J. Cesario  
Chief Financial Officer (principal financial  
and chief accounting officer)