

NANOPHASE TECHNOLOGIES CORPORATION

Form 10-Q

May 11, 2009

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## 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: March 31, 2009

or

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number: 0-22333

## Nanophase Technologies Corporation

(Exact name of registrant as specified in its charter)

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**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 (§232.405 of this chapter) 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 May 4, 2009, there were 21,219,412 shares outstanding of Common Stock, par value \$.01, of the registrant.

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**NANOPHASE TECHNOLOGIES CORPORATION**

**QUARTER ENDED MARCH 31, 2009**

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

	<b>March 31, 2009</b>	<b>December 31, 2008</b>
<b>ASSETS</b>		
<b>Current assets:</b>		
Cash and cash equivalents	\$ 489,592	\$ 723,069
Investments	5,141,210	6,908,888
Trade accounts receivable, less allowance for doubtful accounts of \$9,000 on March 31, 2009 and December 31, 2008	739,488	1,092,125
Other receivables		7,749
Inventories, net	1,232,282	1,154,207
Prepaid expenses and other current assets	657,526	482,452
<b>Total current assets</b>	<b>8,260,098</b>	<b>10,368,490</b>
Investments	5,340,000	5,340,000
Equipment and leasehold improvements, net	6,346,761	6,651,842
Other assets, net	39,150	39,765
	<b>\$ 19,986,009</b>	<b>\$ 22,400,097</b>
<b>LIABILITIES AND STOCKHOLDERS EQUITY</b>		
<b>Current liabilities:</b>		
Current portion of capital lease obligations	\$ 12,858	\$ 22,211
Current portion of deferred other revenue	42,426	74,243
Current portion of long-term debt, less unamortized debt discount	1,052,906	1,570,346
Accounts payable	355,631	356,853
Accrued expenses	1,266,458	1,493,262
Accrued severance	708,181	541,014
<b>Total current liabilities</b>	<b>3,438,460</b>	<b>4,057,929</b>
Long-term portion of capital lease obligations	7,174	9,219
<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, 30,000,000 shares authorized; 21,204,162 and 21,188,912 shares issued and outstanding on March 31, 2009 and December 31, 2008 respectively	212,042	211,889
Additional paid-in capital	91,913,456	91,597,529
Accumulated deficit	(75,585,123)	(73,476,469)

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Total stockholders' equity	16,540,375	18,332,949
	\$ 19,986,009	\$ 22,400,097

*See Notes to Financial Statements.*

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

	<b>Three months ended March 31,</b>	
	<b>2009</b>	<b>As Adjusted 2008</b>
<b>Revenue:</b>		
Product revenue	\$ 1,296,813	\$ 2,942,722
Other revenue	108,345	111,386
Total revenue	1,405,158	3,054,108
<b>Operating expense:</b>		
Cost of revenue	1,314,924	2,000,208
Gross Profit	90,234	1,053,900
Research and development expense	404,044	438,695
Selling, general and administrative expense	1,000,167	1,574,744
Severance charges	794,069	
Loss from operations	(2,108,046)	(959,539)
Interest income	34,003	167,221
Interest expense	(20,907)	(38,416)
Other, net	(13,704)	2,231
Loss before provision for income taxes	(2,108,654)	(828,503)
Provision for income taxes		
Net loss	\$ (2,108,654)	\$ (828,503)
Net loss per share-basic and diluted	\$ (0.10)	\$ (0.04)
Weighted average number of basic and diluted common shares outstanding	21,197,384	21,106,607

*See Notes to Financial Statements.*

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

	Three months ended March 31, 2009	As Adjusted Three months ended March 31, 2008
<b>Operating activities:</b>		
Net loss	\$ (2,108,654)	\$ (828,503)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	336,761	311,053
Amortization of debt discount	15,034	14,018
Amortization of deferred revenue	(31,818)	(31,818)
Stock compensation expense	105,386	200,755
Charges for accelerated vesting of stock options	210,694	
Loss (gain) on disposal of equipment	13,451	(1,800)
Trademark abandonment charges		37,214
Changes in assets and liabilities related to operations:		
Trade accounts receivable	352,637	(579,424)
Other accounts receivable	7,749	
Inventories	(78,075)	(44,461)
Prepaid expenses and other assets	(175,074)	(75,374)
Accounts payable	19,505	531,363
Accrued liabilities	(61,157)	(128,219)
Net cash used in operating activities	(1,393,561)	(595,196)
<b>Investing activities:</b>		
Proceeds from disposal of equipment	24,000	1,800
Acquisition of equipment and leasehold improvements	(52,097)	(87,548)
Payment of accounts payable incurred for the purchase of equipment and leasehold improvements	(35,625)	(5,318)
Purchases of investments	(34,262,405)	(51,264,256)
Sales of investments	36,030,083	52,601,476
Net cash provided by investing activities	1,703,956	1,246,154
<b>Financing activities:</b>		
Principal payment on debt obligations, including capital leases	(543,872)	(10,417)
Proceeds from sale of common stock, net, and exercise of stock options		30,417
Net cash (used in) provided by financing activities	(543,872)	20,000
(Decrease) Increase in cash and cash equivalents	(233,477)	670,958
Cash and cash equivalents at beginning of period	723,069	563,075
Cash and cash equivalents at end of period	\$ 489,592	\$ 1,234,033
<b>Supplemental cash flow information:</b>		
Interest paid	\$ 14,730	\$ 18,633

**Supplemental non-cash investing and financing activities:**

Accounts payable incurred for the purchase of equipment and leasehold improvements	\$	14,898	\$	38,103
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*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" ) 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 months ended March 31, 2009 are not necessarily indicative of the results that may be expected for the year ended December 31, 2009.

These financial statements should be read in conjunction with the Company's audited financial statements and notes thereto for the year ended December 31, 2008, included in the Company's Annual Report on Form 10-K for the year ended December 31, 2008, 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, industrial coating ingredients, abrasion-resistant applications, plastic additives, water filtration, DNA biosensors, antimicrobial products and a variety of polishing applications, including semiconductors and optics. New markets and applications are also being developed. Nanophase targets markets in which it feels practical solutions may be found using nanoengineered products. The Company works with current and potential customers in these targeted markets to identify and supply their material and performance requirements. 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 Global Market under the symbol NANX.

The Company also recognizes regular other revenue in connection with its promissory note to BYK Chemie and from a technology license. These activities are not expected to drive the long-term growth of the business. Both the deferred and license revenue are recognized as "other revenue" in the Company's Statement of Operations, as they do not represent revenue directly from the Company's nanocrystalline materials.

**(3) Change in Accounting Method**

The Company decided to change its method of accounting for patent costs during the fourth quarter of 2008. The Company now expenses patent costs instead of capitalizing them.

The Company's prior practice was to begin the legal process of seeking patents, then record all associated costs as intangible assets. If a patent was granted, the costs would continue to be capitalized and amortized over the estimated economic life of the patents. If a patent was rejected or abandoned, the unamortized cost would then be expensed.

The Company believes that it no longer has the ability to reasonably predict whether a patent will be granted, when it will be granted or whether all the claims in a granted patent ultimately will be upheld. Therefore, management believes that it is preferable to expense all patent costs incurred as period costs.

The expensing of patent costs as a period cost will more closely align these expenses with when the Company is recognizing the related revenue from the patented technology.

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The change in accounting method to expense patent costs was completed in accordance with Statement of Financial Accounting Standards ( SFAS ) No. 154 *Accounting Changes and Error Corrections*. The Company applied this change in accounting principal by retrospectively restating prior year financial statements.

The effect of the change in accounting method on operating results for the quarter ended March 31, 2008 was as follows:

	As Originally Reported	As Adjusted for Accounting Change	Effect of Change
<b>Statements of operations</b>			
Legal Fees	\$ 130,836	\$	\$ 130,836
Patent expense		21,055	(21,055)
Amortization expense	11,592	2,049	9,543
Loss from operations	(1,078,863)	(959,539)	119,324
Net loss	(947,827)	(828,503)	119,324
Basic and diluted loss per share	(0.04)	(0.04)	

The effect of the change in accounting method on the statements of cash flows for the quarter ended March 31, 2008 was as follows:

	As Originally Reported	As Adjusted for Accounting Change	Effect of Change
Net loss	\$ (947,827)	\$ (828,503)	\$ 119,324
Depreciation and Amortization	320,596	311,053	(9,543)
Patent abandonment charges	168,050	37,214	(130,836)
Net cash used in operating activities	(574,141)	(595,196)	(21,055)
Acquisition of patents	(21,055)		21,055
Net cash provided by investing activities	1,225,099	1,246,154	21,055
Increase in cash and cash equivalents	670,958	670,958	
Cash and cash equivalents, January 1, 2008	563,075	563,075	
Cash and cash equivalents, March 31, 2008	\$ 1,234,033	\$ 1,234,033	\$

**Table of Contents****(4) 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. As of March 31, 2009, the fair values of our financial assets are approximately categorized as follows:

	Total	Level 1	Level 2	Level 3
<b>Financial Assets</b>				
Auction rate securities <sup>(a)</sup>	\$ 5,340,000	\$	\$	\$ 5,340,000
Available-for-sale securities <sup>(b)</sup>	5,111,000	5,111,000		
Held-to-maturity investments <sup>(c)</sup>	30,000	30,000		
	\$ 10,481,000	\$ 5,141,000	\$	\$ 5,340,000

There are no financial liabilities adjusted to fair value as of March 31, 2009.

(a) Based on defined rates for auction rate securities dependent on the participation of willing buyers (see Note 5).

(b) Based on the price of United States treasury bills.

(c) Based on stated bank rates.

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On January 1, 2009 the Company adopted the provisions of SFAS 157-2 for our nonfinancial assets and liabilities that are not required to be measured at fair value on a recurring basis. The adoption of SFAS 157-2 for our nonfinancial assets and liabilities did not have a significant effect on our results of operations or financial condition.

**(5) Investments**

Investments on March 31, 2009 and December 31, 2008 were comprised of auction rate securities, United States treasury bills, certificates of deposit and a money market fund. Included in these investments are certificates of deposit in the amount of \$30,000, which are pledged as collateral, primarily for the Company's rent in 2009 and 2008, and is restricted as to withdrawal or usage. Investments held in short-term auction rate securities and certificates of deposit have maturity days of less than 30 days. The Company's investments on March 31, 2009 and December 31, 2008 were as follows:

	March 31, 2009	December 31, 2008
United States treasury bills	\$ 5,106,066	\$ 6,875,982
Certificates of deposit	30,000	30,000
Accrued interest	5,144	2,906
	5,141,210	6,908,888
Auction rate securities	5,340,000	5,340,000
	\$ 10,481,210	\$ 12,248,888

As of May 4, 2009, the Company's remaining investments in auction rate securities (ARS) totaled \$5.34 million. These ARS holdings in the Company's investment portfolio have experienced failed auctions due to a lack of available buyers for them on their expected auction dates. An auction failure means that parties wishing to sell their securities could not be matched with an adequate volume of buyers. In the event there is a failed auction the indenture governing the security requires the issuer to pay interest at a contractually defined rate that is generally above market rates for other types of similar short-term instruments. Despite these failed auctions, there have been no defaults on the underlying securities and investment income on these ARS holdings. They have been issued through the Federal Family Education Loan Program (FFELPs Loans) and carry an AAA credit rating. These FFELPs Loans are guaranteed to 97% of their \$6 million value by the Department of Education. However, these failed auctions have caused the Company to change the level of inputs to determine their fair values. The values of the Company's ARS were estimated using a discounted cash flow model of analysis. Since these inputs were not observable they are classified as level 3 inputs (see Note 4). As a result, for the period ending December 31, 2008, the Company recognized an other than temporary impairment loss on the ARS in the amount of \$660,000. The Company believes that the fair value estimates made for the year ended December 31, 2008 have not changed through March 31, 2009, and therefore, no changes to the carrying value of these investments have been made. The Company will continue to monitor the credit worthiness of the companies underwriting these securities and make any adjustments it deems necessary to reflect the fair value of these securities.

The Company's valuation models assume an average maturity of the ARS in excess of one year; therefore, the Company has classified these securities as long-term on the March 31, 2009 balance sheet.

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Inventories consist of the following:

	March 31, 2009	December 31, 2008
Raw materials	\$ 137,447	\$ 183,150
Finished goods	1,137,482	1,013,704
	1,274,929	1,196,854
Allowance for excess inventory quantities	(42,647)	(42,647)
	\$ 1,232,282	\$ 1,154,207

**(7) Share-Based Compensation**

The Company follows SFAS 123(R), Share-Based Payments, in which compensation expense is recognized only for share-based payments expected to vest. The Company recognized compensation expense related to stock options of \$93,796 and \$152,503 for the three month period ended March 31, 2009 and 2008, respectively. The Company also recognized stock compensation expense related to accelerated vesting of stock options pursuant to severance agreements in the amount of \$210,694 on March 31, 2009.

As of March 31, 2009, there was approximately \$479,000 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 4.2 years.

**Employees Stock Options and Stock Grants**

During the three months ended March 31, 2009, no shares of common stock were issued pursuant to option exercises compared to 16,667 shares for the same period in 2008. For the three months ended March 31, 2009, no shares of stock options were granted compared to 15,000 for the same period in 2008. For the three months ended March 31, 2009, 154,600 shares of stock options were forfeited compared to 8,334 shares for the same period in 2008.

**Restricted Stock**

For the three months ended March 31, 2009 and 2008, the Company was to grant its outside directors shares of deferred common stock totaling 15,250 and 11,634 shares, respectively, under the Company's 2005 Non-Employee Director Restricted Stock Plan. However, each outside director elected to defer receipt of the restricted stock until the termination of their services to the Company. The deferral of restricted stock is being accounted for under the Company's Non-Employee Director Deferred Compensation Plan. The fair value of the awards granted was \$11,590 and \$42,000, respectively, for the restricted share rights and is included in stock-based compensation expense for the three months ended March 31, 2009 and 2008, respectively.

On September 27, 2005, the Company granted 33,333 shares of restricted stock at market value consisting of 16,666 restricted shares and 16,667 performance shares. Grant date fair value was \$6.03 for the September 27, 2005 grant. The restricted shares vested in lump sum or cliff vest on September 27, 2008. On September 27, 2008, 6,100 restricted shares from the September 2005 grant vested at \$1.21. The performance shares expired due to the Company not meeting certain performance goals or milestones on December 31, 2008. As of March 31, 2009, the Company does not have any unvested restricted stock or performance shares outstanding.

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The Company used an estimated forfeiture rate of 4.77% for performance shares for the three months ended March 31, 2008. The fair value (recovery) of the awards granted was \$5,758 for the restricted share rights and (\$1,364) for the performance share rights totaling \$4,394 in stock-based compensation expense for the three months ended March 31, 2008.

For the three months ended March 31, 2009 no options were granted. The following table illustrates the various assumptions used to calculate the Black-Scholes option pricing model for the periods presented:

	March 31, 2009	March 31, 2008
Weighted-average risk-free interest rates:		3.31%
Dividend yield:		
Weighted-average expected life of the option:		7 Years
Weighted-average expected stock price volatility:		76.66%
Weighted-average fair value of the options granted:		\$ 2.27

**(8) Significant Customers and Contingencies**

Revenue from three customers constituted approximately 54%, 17% and 12%, respectively, of the Company's total revenue for the three months ended March 31, 2009. Amounts included in accounts receivable on March 31, 2009 relating to these three customers were approximately \$269,000, \$84,000 and \$0, respectively. Revenue from these three customers constituted approximately 37%, 32% and 7% respectively, of the Company's total revenue for the three months ended March 31, 2008. Amounts included in accounts receivable on March 31, 2008 relating to these three customers were approximately \$742,000, \$441,000 and \$0 respectively.

The Company currently has a supply agreement with BASF Corporation (BASF), the Company's largest customer, and a technology development agreement with Altana Chemie, that have contingencies outlined in them which could potentially result in the license of technology and/or the sale of production equipment, providing capacity sufficient to meet the customer's production needs, from the Company to the customer, if triggered by the Company's failure to meet certain performance requirements, certain other obligations and/or certain financial condition covenants. The financial condition covenants in one of the Company's supply agreements with its largest customer, as amended, trigger a technology transfer (license or, optionally, an equipment sale) in the event (a) that earnings of the Company for a twelve month period ending with its most recently published quarterly financial statements are less than zero and its cash and cash equivalents are less than \$2,000,000, (b) of an acceleration of any debt maturity having a principal amount of more than \$10,000,000, or (c) of the Company's insolvency, as further defined within the agreement. In the event of an equipment sale, upon incurring a triggering event, the equipment would be sold to the customer at 115% of the equipment's net book value. Under another of the Company's supply agreements with BASF, upon the Company's breach of its contractual obligations to BASF, the Company would be required to sell BASF certain production equipment 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.

The Company believes that it has sufficient cash and investment balances to avoid the first triggering event under the supply agreement with BASF for the foreseeable future. If a triggering event were to occur and BASF elected to proceed with the license and related sale mentioned above, the Company would receive royalty payments from this customer for products sold using the Company's

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technology; however, the Company 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 the Company's agreement with the customer. Similar consequences would occur if the Company were determined to have materially breached certain other provisions of its supply agreement with BASF or the Company's technology development agreement with Altana Chemie. Any such event would also result in the loss of many of the Company's key staff and line employees due to economic realities. The Company believes that its employees are a critical component of its success and could be difficult to replace and train quickly. Given the occurrence of any such event, the Company might not be able to hire and retain skilled employees given the stigma relating to such an event and its impact on the Company.

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

Revenue from international sources approximated \$248,000 and \$292,000 for the three months ended March 31, 2009 and 2008, respectively. As part of its revenue from international sources, the Company recognized approximately \$171,000 in product revenue from several German companies and \$75,000 in other revenue from a technology license fee from its Japanese licensee for the three months ended March 31, 2009. Revenue from these same international sources approximated \$215,000 and \$75,000 for the same period in 2008.

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

### **(10) Severance Charges**

In the first quarter of 2009, the Company announced the resignations of Mr. Robert Haines, its then-current Vice-President of Operations, and Dr. Richard Brotzman, its then-current Chief Technology Officer. Additionally, the Company eliminated twelve positions within the Operations group as a result of a reorganization plan implemented to align the organization with current demand based upon current economic conditions and the Company's shift in strategy to develop a more customer-focused direct selling approach. During this process, management continues to seek to build its marketing and applications development capabilities. As a result of these resignations, the Company incurred a total of \$794,069 of cash and non-cash severance charges. Included in these charges were salaries and benefits, accelerated vesting of stock options (non-cash) and other expenses. Of these charges, approximately \$211,000 or 27% were related to the accelerated vesting of stock option which have no cash impact and are expected to have a minimal dilutive effect if any.

### **(11) Recently Adopted Accounting Pronouncements**

In December 2007, the FASB issued SFAS 141(R), *Business Combinations*. This Statement provides greater consistency in the accounting and financial reporting for business combinations. SFAS 141(R) establishes new disclosure requirements and, among other things, requires the acquiring entity in a business combination to record contingent consideration payable, to expense transaction costs, and to recognize all assets acquired and liabilities assumed at acquisition-date fair value. This standard is effective for the beginning of the Company's first fiscal year beginning after December 15, 2008. SFAS 141(R) will have a significant impact on the accounting for future business combinations after the effective date and will impact financial statements both on the acquisition date and subsequent periods. The Company adopted the provisions of SFAS 141(R) during the quarter ended and will apply its provisions for any future business combinations.

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In December 2007, the FASB issued SFAS 160, *Noncontrolling Interests in Consolidated Financial Statements*. SFAS 160 amends Accounting Research Bulletin No. 51, *Consolidated Financial Statements*, to establish accounting and reporting standards for the minority or noncontrolling interests in a subsidiary or variable interest entity and for the deconsolidation of a subsidiary or variable interest entity. Minority interests will be recharacterized as noncontrolling interests and classified as a component of equity. It also establishes a single method of accounting for changes in a parent's ownership interest in a subsidiary and requires expanded disclosures. SFAS 160 is effective for the beginning of the Company's first fiscal year beginning after December 15, 2008, and requires retroactive adoption of the presentation and disclosure requirements for existing minority interests. The Company adopted the provisions of SFAS 160 this quarter and it had no impact on its financial position or results of operations.

In March 2008, the FASB issued SFAS 161, *Disclosures about Derivative Instruments and Hedging Activities*, which amends SFAS 133. SFAS 161 requires enhanced disclosures about an entity's derivative and hedging activities to discuss the underlying risks that an entity intends to manage as well as accounting designation. This Statement is effective for fiscal years beginning after November 15, 2008. The Company adopted the provisions of SFAS 161 this quarter and it had no effect on its financial statements.

## **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 coatings, ingredients, personal care, abrasion-resistant applications, antimicrobial products, plastics additives, medical diagnostics and a variety of polishing applications, including semiconductors and optics. The Company targets markets in which it feels practical solutions may be found using nanoengineered products. The Company works closely with current and potential customers in these target markets to identify their material and performance requirements and market its own materials to various end-use applications manufacturers. Newer developed technologies have made certain new products possible and opened potential new markets. Management expects growth in end-user (customers of Nanophase's customers) adoption in 2009 and beyond and revenue growth relative to these new markets to follow thereafter. Management further expects that the Company will attract additional customers to help it achieve growth in certain markets in 2009 and beyond.

### **Results of Operations**

Total revenue decreased to \$1,405,158 for the three months ended March 31, 2009, compared to \$3,054,108 for the same period in 2008. A substantial majority of the Company's revenue for the three months ended March 31, 2009 is from the Company's three largest customers. See Note 8 to the Financial Statements for additional information regarding the revenue the Company derived from these three customers in the first quarter of 2009. Product revenue decreased to \$1,296,813 for the three months ended March 31, 2009, compared to \$2,942,722 for the same period in 2008. The decrease in product revenue was primarily attributed to a decrease in sales to its architectural coatings customer, which may have been impacted by the current state of the housing market, decreased sales from the Company's largest customer, a portion of which management attributes to inventory issues and decreased sales to Rohm and Haas Electronic Materials and BYK-Chemie. The Company and BASF Corporation currently have a technology agreement in place that has led to the joint development of the second generation of sunscreen nanomaterials for other potential personal care applications.



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Other revenue decreased to \$108,345 for the three months ended March 31, 2009, compared to \$111,386 for the same period in 2008. This decrease was primarily attributed to decreases in shipping revenue.

The majority of the total revenue generated during the three months ended March 31, 2009 was from the Company's largest customer in healthcare for sunscreens components, from the Company's second largest customer for an application in architectural coatings and from the Company's medical diagnostic customer.

Cost of revenue generally includes costs associated with commercial production and customer development arrangements. Cost of revenue decreased to \$1,314,924 for the three months ended March 31, 2009, compared to \$2,000,208 for the same period in 2008. The decrease in cost of revenue was generally attributed to decreased revenue volume along with decreases in commodity metals pricing, reduction in manufacturing overhead and the Company's continued efficiencies in reducing its remaining variable manufacturing costs on nanomaterials. These decreases were partially offset by inefficiencies due to incomplete utilization of production assets. Nanophase expects to continue new nanomaterial development, primarily using its NanoArc® synthesis and dispersion technologies, for targeted applications and new markets through 2009 and beyond. At current revenue levels the Company has generated a positive gross margin. Although the Company's margins have been impeded by not having enough revenue to absorb the manufacturing overhead that is required to work with current customers and expected future customers, particularly in light of the current quarter's reduction in revenue volume, the elimination of twelve positions within the Operations group as a result of a reorganization plan implemented in the first quarter of 2009 will have a positive near-term impact on margins. We have effectively reduced our manufacturing overhead to a point where we expect to see relative improvements beginning in the second quarter. Management continues to believe that the current fixed manufacturing cost structure is sufficient to support significantly higher levels of production, given current revenue mix and resultant product revenue. The extent to which the Company's margins continue to grow, as a percentage of total revenue, will be dependent upon revenue mix, revenue volume, the Company's ability to continue to cut costs and the Company's ability to pass commodity market-driven raw materials increases on to its customers. As product revenue volume increases, this will result in more of the Company's fixed manufacturing costs being absorbed, leading to increased margins. The Company expects to continue to focus on reducing its controllable variable product manufacturing costs through 2009 and beyond, with potential offsetting increases in the commodity metals markets, but may or may not continue to see absolute dollar gross margin growth through 2009 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 Company's development or acquisition of new product applications and coating formulations and the cost of enhancing the Company's manufacturing processes. In another example, the Company has been and continues to be engaged in research to enhance its ability to disperse its 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 for use by BYK-Chemie and other customers of Nanophase.

Now that the Company has demonstrated the capability to produce pilot quantities of mixed-metal oxides in a single crystal phase, the Company does 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. Management is now working on several related commercial opportunities. The Company expects that this technique should not be difficult to scale to large quantity commercial volumes once application viability and firm demand are established. The Company also has 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. The Company is not certain when or if any significant revenue will be generated from the production of the materials described above.

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Research and development expense decreased to \$404,044 for the three months ended March 31, 2009, compared to \$438,695 for the same period in 2008. The decrease in research and development expense was largely attributed to reduction in salary, stock compensation (non-cash) and materials and supplies expenses. These decreases were partially offset by increased legal fees. The Company does not expect research and development expense to increase significantly in 2009.

Selling, general and administrative expense decreased to \$1,000,167 for the three month period ended March 31, 2009, compared to \$1,574,744 for the same period in 2008. The net decrease was primarily attributed to decreases in salary expense, legal fees and stock compensation (non-cash) expenses.

In the first quarter of 2009, the Company announced the resignations of Mr. Robert Haines, its then-current Vice-President of Operations, and Dr. Richard Brotzman, its then-current Chief Technology Officer. Additionally, the Company eliminated twelve positions within the Operations group as a result of a reorganization plan implemented to align the organization with current demand based upon current economic conditions and the Company's shift in strategy to develop a more customer-focused direct selling approach. During this process, management continues to seek to build its marketing and applications development capabilities. As a result of the above resignations, the Company incurred a total of \$794,069 of cash and non-cash severance charges. Included in these charges were salaries and benefits, accelerated vesting of stock options (non-cash) and other expenses. Of these charges, approximately \$211,000 or 27% were related to the accelerated vesting of stock option which have no cash impact and are expected to have a minimal dilutive effect if any.

Interest income decreased to \$34,003 for the three month period ended March 31, 2009, compared to \$167,221 for the same period in 2008. The decrease was primarily due to decreased investment yields and decreases in funds available for investment.

## **Inflation**

Management believes inflation has not had a material effect on the Company's operations or on its financial position. However, supplier price increases and wage and benefit inflation, both of which represent a significant component of the Company's costs of operations, may have a material effect on the Company's operations and financial position in 2009 and beyond, if the Company is unable to pass through those increases under its present contracts or through to its markets in general.

## **Liquidity and Capital Resources**

The Company's cash, cash equivalents and investments amounted to \$5,630,802 on March 31, 2009, compared to \$7,631,957 on December 31, 2008 and \$16,042,657 on March 31, 2008. On June 30, 2008, the Company reclassified its auction rate securities in the amount of \$6 million as long-term investments. The net cash used in the Company's operating activities was \$1,393,561 for the three months ended March 31, 2009, compared to \$595,196 for the same period in 2008. Net cash provided by investing activities, which is due to maturities of securities and to a lesser extent capital expenditures offset partially by purchases of securities, amounted to \$1,703,956 for the three months ended March 31, 2009 compared to \$1,246,154 for the same period in 2008. Capital expenditures amounted to \$52,097 and \$87,548 for the three months ended March 31, 2009 and 2008, respectively. Net cash used in financing activities is due to principal payments on an equipment loan from BYK-Chemie and capital lease obligations amounting, in total, to \$543,872 for the three months ended March 31, 2009 compared to \$20,000 of net cash provided primarily by the issuance of shares of common stock pursuant to the exercise of options for the same period in 2008.

On July 2, 2007, the Company issued and sold 1,900,000 shares of common stock pursuant to a registration statement filed on May 22, 2007 and declared effective by the SEC on May 31, 2007 to certain institutional investors at a purchase price of \$5.92 per share, for an aggregate purchase price of \$11.2 million and net proceeds of approximately \$10.5 million.

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The Company's supply agreement with its largest customer contains several financial covenants which could potentially impact the Company's liquidity. The most restrictive financial covenants under this agreement require the Company to maintain a minimum of \$2.0 million in cash and cash equivalents and that the Company not have the acceleration of any debt maturity having a principal amount of more than \$10,000,000, in order to avoid triggering a transfer of technology and equipment to the Company's largest customer. The Company had approximately \$5.6 million in cash, cash equivalents and investments and debt net of unamortized debt discount of less than \$1.1 million on March 31, 2009. This supply agreement and its covenants are more fully described in Note 8 to the Company's Financial Statements.

The Company believes that cash from operations and cash, cash equivalents and investments on hand and interest income thereon, will be adequate to fund the Company's operating plans for the foreseeable future. The Company's actual future capital requirements in 2009 and beyond will depend, however, on many factors, including customer acceptance of the Company's current and potential nanomaterials and product applications, continued progress in the Company's research and development activities and product testing programs, the magnitude of these activities and programs, and the costs necessary to increase and expand the Company's manufacturing capabilities and to market and sell the Company's materials and product applications. Other important issues that will drive future capital requirements will be the development of new markets and new customers as well as the potential for significant unplanned growth with the Company's existing customers. The Company expects that capital spending relating to currently known capital needs for 2009 will be approximately \$450,000, but could be even greater due to the factors discussed above.

As of May 4, 2009, the Company's investments in ARS's totaled \$5.34 million. These ARS holdings in the Company's investment portfolio have experienced failed auctions due to a lack of available buyers for them on their expected auction dates. An auction failure means that the parties wishing to sell their securities could not be matched with an adequate volume of buyers. In the event that there is a failed auction the indenture governing the security requires the issuer to pay interest at a contractually defined rate that is generally above market rates for other types of similar short-term instruments. Despite these failed auctions, there have been no defaults on the underlying securities and investment income on these ARS holdings. They have been issued through the Federal Family Education Loan Program (FFELPs Loans) and carry an AAA credit rating. These FFELPs Loans are guaranteed to 97% of their \$6 million value by the Department of Education. Although a liquidity short-fall may exist from auction to auction, the Company is not aware of any changes to ratings or other indicators of a permanent decline in value. However, these failed auctions have caused the Company to change the level of inputs to determine their fair values. Should current market conditions for ARS persist, the Company may be forced to sell some portion or all of its holdings at a discount to face value of between 6% and 50% in order to avoid a potential liquidity crisis in 2010. Management has undertaken aggressive measures to reduce cash used in operations in hopes of avoiding a discounted sale of any of these ARS's prior to the market for them stabilizes. The values of the Company's ARS's were estimated using a discounted cash flow model of analysis. Since these inputs were not observable they are classified as level 3 inputs (see Note 4). As a result, for the period ending December 31, 2008, the Company recognized an other than temporary impairment loss on the ARS's in the amount of \$660,000 which was reflected in the statement of operations. The Company's valuation models assume an average maturity of the ARS's in excess of one year; therefore, the Company has classified these securities as long-term on the March 31, 2009 balance sheet.

Should events arise that make it appropriate for the Company to seek additional financing, it should be noted that additional financing may not be available on acceptable terms or at all, and any such additional financing could be dilutive to the Company's 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 the Company's control; the need to meet previously discussed cash requirements to avoid a triggering event; or various other circumstances coming to pass that are currently not anticipated by the Company.

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On March 31, 2009, the Company had a net operating loss carryforward of approximately \$79.4 million for income tax purposes. Because the Company may have experienced ownership changes within the meaning of the U.S. Internal Revenue Code in connection with its 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 the Company's carryforward expired in 2008. If not utilized, the remaining carryforward will expire at various dates between January 1, 2009 and December 31, 2028. 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, the Company has concluded that it is likely that some portion of this carryforward will expire before ultimately becoming available to reduce income tax liabilities.

## **Off-Balance Sheet Arrangements**

The Company has not created, and is not party to, any special-purpose or off-balance sheet entities for the purposes of raising capital, incurring debt or operating the Company's business. Nanophase does not have any off-balance sheet arrangements or relationships with entities that are not consolidated into the Company's financial statements that are reasonably likely to materially affect Nanophase's liquidity or the availability of capital resources.

## **Credit Environment**

The credit markets continue to be volatile and have experienced a shortage in overall liquidity due to the sub-prime lending industry. The Company neither engages in any business activities in the mortgage industry, nor does it hold mortgage-backed securities in its investment portfolio. Overall the liquidity shortage in the marketplace includes Auction Rate Securities. The Company believes it has sufficient liquidity from its cash and investment accounts to satisfy 2009 operational needs. See Notes 4 and 5 to the financial statements and Liquidity and Capital Resources in Management's Discussion and Analysis for a further discussion of liquidity issues.

## **Safe Harbor Provision**

The Company wants 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. These statements reflect the Company's current expectations of the future results of its operations, performance and achievements. Forward-looking statements are covered under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. The Company has 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 beliefs and are based on information now available to it. Accordingly, these statements are subject to certain risks, uncertainties and contingencies that could cause the Company's actual results, performance or achievements in 2009 and beyond to differ materially from those expressed in, or implied by, such statements. These risks, uncertainties and factors include, without limitation: a decision by a customer to cancel a purchase order or supply agreement in light of the Company's dependence on a limited number of key customers; uncertain demand for, and acceptance of, the Company's nanocrystalline materials; the Company's limited manufacturing capacity and product mix flexibility in light of customer demand; the Company's limited marketing experience; changes in development and distribution relationships; the impact of competitive products and technologies; the Company's dependence on patents and protection of proprietary information; the resolution of litigation in which the Company may become involved; and other risks set forth under the caption Risk Factors in the Company's Annual Report on Form 10-K for

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the year ended December 31, 2008. 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.

### **Item 4. Controls and Procedures**

#### **Disclosure controls**

An evaluation of the effectiveness of the design and operation of the Company's disclosure controls and procedures as of December 31, 2008 was conducted under the supervision and with the participation of the Company's management, including Jess Jankowski, the Chief Executive Officer (CEO) and Chief Financial Officer (CFO) of the Company. Based on that evaluation, Mr. Jankowski concluded that the Company's disclosure controls and procedures were effective as of such date to ensure that information required to be disclosed in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and that the Company's disclosure controls and procedures are effective to ensure that material information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is made known to management and others, as appropriate, to allow timely decisions regarding required disclosures.

#### **Internal control over financial reporting**

The Company's management, including Mr. Jankowski, the CEO and CFO of the Company, confirm that there was no change in the Company's internal control over financial reporting during the quarter ended March 31, 2009 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. Submission of Matters to a Vote of Security Holders**

None.

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**Item 5. Other Information**

None.

**Item 6. Exhibits**

- Exhibit 4.1 Amended and Restated Rights Agreement, dated as of January 30, 2009, by and between the Company and Mellon Investor Services LLC, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K/A filed February 5, 2009.
- Exhibit 4.2 Amended and Restated 2006 Stock Appreciation Rights Plan, adopted April 8, 2009, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed April 9, 2009.
- Exhibit 10.1\* Separation Agreement and General Release of All Claims between Richard Brotzman, Jr. and the Company, effective March 2, 2009, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed March 3, 2009.
- Exhibit 10.2\* Separation Agreement and General Release of All Claims between Robert W. Haines and the Company, effective February 19, 2009, incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed March 3, 2009.
- Exhibit 10.3 Supply Agreement effective as of March 23, 2009, between the Company and Rohm and Haas Electronic Materials CMP Inc, incorporated by reference to Exhibit 10.56 to the Company's Annual Report on Form 10-K filed March 25, 2009.
- Exhibit 31.1 Certification of Chief Executive Officer pursuant to Rules 13a-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.

\* Management contract or compensatory plan or arrangement.

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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: May 11, 2009

By: /s/ JESS JANKOWSKI  
Jess Jankowski  
President and Chief Executive Officer, Chief Financial Officer

Date: May 11, 2009

By: /s/ SHERMAN JUNG  
Sherman Jung  
Controller