

NANOPHASE TECHNOLOGIES CORPORATION

Form 10-K

March 31, 2010

Table of Contents

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

Washington, D.C. 20549

**FORM 10-K**

**x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE  
ACT OF 1934**

**For the fiscal year ended December 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 000-22333**

**NANOPHASE TECHNOLOGIES CORPORATION**

**(Exact name of registrant as specified in its charter)**

Edgar Filing: NANOPHASE TECHNOLOGIES CORPORATION - Form 10-K

**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) (zip code)

**Registrant's telephone number, including area code: (630) 771-6708**

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

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

**Common Stock, par value \$.01 per share**

**Preferred Stock Purchase Rights**

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes  No

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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. 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 large accelerated filer, 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

The aggregate market value of the registrant's voting stock held by non-affiliates of the registrant based upon the last reported sale price of the registrant's common stock on June 30, 2009 was \$16,154,413 as of such date.

The number of shares outstanding of the registrant's common stock, par value \$.01, as of March 22, 2010 was 21,204,162.

**DOCUMENTS INCORPORATED BY REFERENCE**

None.

**Table of Contents**

Table of Contents

	<b><u>PART I</u></b>	
Item 1.	<u>Business</u>	1
	<u>General</u>	1
	<u>Nanomaterials</u>	1
	<u>The Company's Technologies</u>	2
	<u>Marketing</u>	3
	<u>Technology and Engineering</u>	4
	<u>Manufacturing Operations</u>	4
	<u>Intellectual Property and Proprietary Rights</u>	5
	<u>Competition</u>	5
	<u>Governmental Regulations, Including Climate Change</u>	6
	<u>Employees</u>	6
	<u>Backlog</u>	7
	<u>Business Segment and Geographical Information</u>	7
	<u>Key Customers</u>	7
	<u>Forward Looking Statements</u>	7
	<u>Investor Information</u>	8
Item 1A.	<u>Risk Factors</u>	8
Item 1B.	<u>Unresolved Staff Comments</u>	8
Item 2.	<u>Properties</u>	8
Item 3.	<u>Legal Proceedings</u>	9
Item 4.	<u>[Removed and Reserved]</u>	9
	<b><u>PART II</u></b>	
Item 5.	<u>Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	10
Item 6.	<u>Selected Financial Data</u>	11
Item 7.	<u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	11
Item 7A.	<u>Quantitative and Qualitative Disclosures About Market Risk</u>	18
Item 8.	<u>Financial Statements and Supplementary Data</u>	18
Item 9.	<u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	18
Item 9A (T).	<u>Controls and Procedures</u>	18
Item 9B.	<u>Other Information</u>	19
	<b><u>PART III</u></b>	
Item 10.	<u>Directors, Executive Officers and Corporate Governance</u>	20
Item 11.	<u>Executive Compensation</u>	25
Item 12.	<u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	29
Item 13.	<u>Certain Relationships and Related Transactions and Director Independence</u>	31
Item 14.	<u>Principal Accountant Fees and Services</u>	32
	<b><u>PART IV</u></b>	
Item 15.	<u>Exhibits, Financial Statement Schedules and Reports on Form 8-K</u>	32
	<u>Signatures</u>	

**Table of Contents**

**PART I**

**Item 1. Business  
General**

Nanophase Technologies Corporation ( Nanophase or the Company , including we or us ) develops applications, and produces engineered nanomaterial products for diverse markets sunscreens, personal care, architectural coatings, architectural window cleaning and restoration, industrial coating ingredients, plastic additives, semiconductor polishing, optics polishing and other markets. The Company develops and commercially manufacturers a broad range of nanomaterials and dispersions. Recently, the Company evolved from the role of strictly a materials provider to a that of a solutions provider. By directly integrating its products into customer products the Company can most effectively prove added value. Along these lines, the Company also extended its reach by launching its first complete product line in the Architectural Window Cleaning market, under the trade name NanoUltra (www.nano-ultra.com). Although Nanophase markets its products globally, the Company s primary strategic focus has been the North American market. 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.

Nanophase has created a leading commercial approach to the application of its integrated nanomaterials technologies designed to deliver an optimal engineered nanomaterial solution for a target market or specific customer application. With respect to the products it makes, the Company has complete capability from application development and laboratory samples through pilot production and, finally, commercial production in metric ton(s) capacity. Nanophase has development and application laboratories and manufacturing capacity in two locations in the Chicago area. The Company s manufacturing is based on Lean Six Sigma discipline and is certified to ISO 9001, American National Standard, Quality Management System Requirements; ISO 14001, American National Standard, Environmental Management System Requirements; and is compliant with current Good Manufacturing Practices ( cGMP ) for products under FDA regulation.

We have undergone a strategic shift toward penetrating key markets via interactive applications development with end customers in these markets. We believe this strategy leverages the applications development expertise we have cultivated over the last several years and best positions us to build direct sales to end use customers, in addition to translating these advantages through our market partners.

**Nanomaterials**

Nanomaterials are generally comprised of particles (nanoparticles) that are less than 100 nanometers in diameter and these nanoparticles have a wide range of unique properties owing to their very small size. A nanometer is one-billionth of a meter, or about 100,000 times smaller in size than the width of a human hair. To give another perspective, a six-foot tall person is around two billion nanometers in height.

Nanotechnology involves manipulating the properties of materials, made up of basic elements or combinations thereof, at the 100-nanometer level or below. At this scale, the relatively small number of constituent atoms, the large proportion of these atoms on surfaces, and their confined dimensions lead materials to exhibit unique properties that can be used in many applications to benefit performance.

Nanomaterials are an important and enabling part of the diverse field of nanotechnology and are the building blocks of the Company s nanotechnology products. The ultimate performance and value of Nanophase s products in a given application is a function of composition, size, shape, structure, surface chemistry and coating and dispersion potential. The Company s technologies for engineering and manufacturing nanomaterials, and the Company s understanding of how to make nanomaterials exhibit desirable performance characteristics in various media, result in commercial nanomaterials solutions that Nanophase believes offer superior performance in many applications.

## **Table of Contents**

Nanomaterials have applications in diverse global markets where they are incorporated into a process, such as semiconductor polishing, or a product, such as an industrial coating to prevent degradation from ultra-violet radiation or significantly improve wear resistance or an architectural window glass polishing solution family (NanoUltra<sup>®</sup>). Multiple markets exist for Nanophase's products since nanomaterials offer advantages in many applications, such as improved properties and performance, longer wear or product life, lower overall product cost, or in the development of new products or processes.

Most of the raw materials used in the Company's various processes are commercially available. In some cases, Nanophase relies on sole-source processors of materials that utilize an array of worldwide sources for the raw materials that they process to the Company's specifications.

### **The Company's Technologies**

Nanophase has created an integrated platform of commercial nanomaterial technologies that are patented, patent-pending or proprietary. These technologies are designed to deliver a nanomaterial solution for a targeted market or a specific customer application. The Company's platform provides flexibility and capability to engineer nanomaterials that meet a customer's performance requirements and deliver its nanomaterial solutions in a readily usable format. Nanophase's technologies are scalable and robust, having produced several hundred metric tons annually.

The Company's nanomaterials platform includes two distinct manufacturing processes (PVS and NanoAr<sup>®</sup> Synthesis) to make nanomaterials or nanoparticles. These technologies allow Nanophase to control critical nanomaterial properties (composition, size, shape, structure, surface chemistry) and engineer those to meet specific application performance. Compared to other well developed known nanoparticle processes, the Company's plasma-produced particles are produced as nonporous, dense, discrete single crystals, which the Company believes possess a unique set of bulk and surface properties. Nanophase currently has the capacity to produce over a million pounds of nanomaterials annually.

Perhaps of equal importance, Nanophase has also developed proprietary technology to disperse nanoparticles in both aqueous (water-based) and several organic solvent systems. These dispersions are highly stable at high weight loading (typically 18-55% by weight), attributes which provide distinct market advantages. Dispersed nanomaterials are desired by many customers for use in their processes or products because of the ease of incorporation. As examples, dispersed nanomaterials are used in architectural coatings, architectural window cleaners, industrial coatings, plastic additives and semiconductor polishing. This integration flexibility allows Nanophase to serve more customers and serve them better, and is critical to its role as a solutions provider, not simply that of a materials provider.

Nanophase has also developed patented and proprietary technology to coat or surface treat nanoparticles to further engineer surface chemistry by two main processes. In many applications, such as sunscreens, this technology is vital to ensure formulation compatibility and, in some cases, optimal application performance. The Company delivers hundreds of tons of surface engineered nanoparticles to its customers annually, including coated nanomaterials that are used by major global consumer products companies for sunscreens and personal care products.

As markets continue to develop and grow, we believe that customers' preferred delivery formats will continue to be dispersed and/or coated nanomaterials. We believe we are well positioned with our platform of integrated commercial nanomaterial technologies to respond to this demand. We plan to maintain and advance our intellectual property and technologies to remain competitive in the fields of nanomaterials development, applications development and commercialization.

## **Table of Contents**

We have steadily expanded our ability to commercially utilize and deliver our technologies. Through large-scale manufacturing of nanomaterials utilized in the manufacture of consumer sunscreen and personal care products and architectural coatings, we have developed production expertise that has allowed us to improve processes relating to those nanomaterials as well as processes relating to other nanomaterials. This experience has translated into additional know-how, intellectual property and advances in the technologies and manufacturing processes that reduce variable manufacturing costs and improve gross margins.

## **Marketing**

We focus our marketing strategy on differentiated nano solutions that create superior value for our customers. This customer-focused strategy means we will not be solely dependent upon the efforts of our market partners for future sales growth. While the partner model can be an excellent method for addressing the needs of certain markets, we have found an increasing number of cases where our integration experience is critical to presenting an effective solution to a customer, and therefore launched a second, customer direct business model where we deal with the manufacturer directly and demonstrate the benefits of our solutions in the manufacturer's product. Our deep market knowledge of certain market segments has allowed us to thoroughly understand customer needs and our products' value proposition. This knowledge, combined with our applications development expertise, supports marketing and selling of our nano solutions to multiple companies within each market segment. We work closely with each customer to develop a nanomaterial solution for their specific application, but we find that as we develop greater applications development expertise in a given area, specific applications development often becomes a routine process within Nanophase. This is where we believe our future customers will perceive the greatest value to working with Nanophase.

This customer-focused marketing approach increases the probability of success, allows us to use an integrated platform of nanomaterial technologies and reduce the time-to-market. The more our applications development scientists and sales team work directly with customers to develop nanomaterial solutions, the more quickly and successfully we will be able to grow sales.

We will, of course, also continue to devote significant resources to maintaining and growing our relationships with our valued market partners. We expect these relationships to continue to contribute to our future growth for the foreseeable future.

In early 2010, Nanophase launched its first standalone direct-to-user products, the NanoUltra line of architectural window cleaning and restoration products. This marks a change in the way the Company goes to market, as we acted on compelling market feedback that our stain removal and cleaning products could be competitive in the professional window cleaning supplies market. At this time, we plan on selling these products to customers in the contractor market and through distributors. We think that a commercially successful introduction to the professional window cleaning and restoration market could lead to further deployment to the consumer products market. We expect to learn more about the acceptability of our products in these markets over the next twelve to eighteen months.

Our market partners currently include BASF Corporation (BASF), a \$50+ billion global chemical company; Altana Chemie, a \$1+ billion chemical company and a leader in coating and plastic additives; and Alfa Aesar, a division of Johnson Matthey. Each market partner is viewed as a leader in its respective markets with recognized brands, significant revenues and global sales reach. Nanophase has long-term exclusive relationships with each of its market partners. Market partners typically sell clearly defined nanomaterial products into specific markets.

In addition to the applications with market partners, Nanophase's end-use manufacturing customers are using its nanomaterial products for architectural coatings, medical diagnostics, optics polishing, textile coatings and variety of other applications.

## **Table of Contents**

Because our technology can be applied to a wide variety of applications, we focus our efforts on only a handful of market segments to gain a depth of knowledge and leverage our learning curve. If we find a unique application outside of these segments that does not require significant development resources then we may pursue it as opportunistic business, but we will not chase every potential application simply because we feel we might add value. We believe this approach has been directly responsible for the increase in our pipeline of well-defined customer opportunities over the past year, and will contribute to a higher success rate of those opportunities.

### **Technology and Engineering**

Our efforts in research and development, process engineering and advanced engineering groups are focused in three major areas: 1) application development for nanomaterial products; 2) creating or obtaining additional core nanomaterial technologies and/or nanomaterials that have the capability to serve multiple markets; and 3) continuing to improve our core technologies to improve manufacturing operations and reduce costs.

Most of the research and development at Nanophase is directly related to applications development. We endeavor to either meet specific customer needs or to develop applications solutions to unmet needs in a particular market where our materials may offer a distinct performance advantage. We believe that aggressively pursuing applications in targeted areas will help Nanophase compete as a technical and commercial innovator using nanomaterials, and more importantly, become perceived as a solutions provider by our customers and not simply as another materials supplier.

Nanophase's total research and development expense, which includes all expenses relating to the technology and advanced engineering groups, during the years ended December 31, 2009 and 2008, was \$1,615,894 and \$1,764,284, respectively. This represents the Company's share of these expenses only and does not take into account amounts spent by our largest customers in support of our partnerships. The Company's future success will depend in large part upon its ability to develop products which bring a high degree of value to its customers' products. Through the three-year period ended December 31, 2009, the Company has had cumulative research and development expenses of approximately \$5.2 million and cumulative expenditures on equipment and leasehold improvements of approximately \$1.9 million.

### **Manufacturing Operations**

The Company has manufacturing capacity based in two locations in the Chicago area. At each of these facilities, Nanophase is able to develop and supply nanomaterials in quantities ranging from grams to metric tons. Nanophase's facilities are certified to ISO 9001:2000 international standards and are cGMP compliant for applicable bulk pharmaceutical manufacturing. Nanophase is also in the process of registering some of the chemicals it ships to customers in Europe in compliance with the European Chemical Agency's regulations issued to date pertaining to Registration Evaluation and Authorization of Chemicals ( REACH ). The Company's facilities are also certified to the international standard for environmental management, ISO 14001:2004.

Our operations employ a cellular, team-based manufacturing approach, where workers operate in work cells, under a lean manufacturing environment to continuously advance and improve production capabilities. We have also developed a highly flexible workforce that has been cross-trained to allow it to be employed broadly across our manufacturing processes. Our manufacturing approach and targeted engineering actions have resulted in continuing process innovations and improvements that have reduced the variable manufacturing cost significantly over the past five years.

We are committed to a lean manufacturing approach, to the extent possible given a certain measure of irregular demand, where we are able to reduce excess labor and manage the lowest practical inventory and supply levels in order to minimize working capital demands. This approach complements two of the Company's major operational goals - (1) to increase nanomaterials output without adding unnecessarily to existing equipment and (2) to continually reduce production costs while consistently producing high quality products.



## **Table of Contents**

### **Intellectual Property and Proprietary Rights**

Nanophase relies on a combination of patent, trademark, copyright, trade secret and other intellectual property laws, nondisclosure agreements and other protective measures to protect its intellectual property. In addition to obtaining patent and trademarks based on the Company's inventions and products, Nanophase may also license certain third-party patents from time-to-time to expand its technology base.

As of the date of this filing, Nanophase owns 11 U.S. patents and 2 pending U.S. patent applications. Nanophase also owns 33 foreign patents and patent applications consisting of 28 issued or allowed foreign patents and 5 pending foreign patent applications. All of the pending and owned foreign patents are counterparts to domestic filings covering its platform of nanotechnologies. The Company's oldest issued patents will begin to expire in 2013.

Nanophase has licensed its PVS technology for specific markets in certain geographic regions to CIK NanoTek (formerly C.I. Kasei), a subsidiary of Itochu Corporation. Under this license agreement, the Company earns royalties on net sales of manufactured products containing nanocrystalline materials. The license agreement also provides for minimum royalty payments to maintain exclusivity. The license agreement expires on March 31, 2013 unless earlier terminated as provided therein. Upon expiration of the license agreement, the license will become non-exclusive.

### **Competition**

Within each of its targeted markets and product applications, Nanophase faces potential competition from advanced materials and chemical companies and suppliers of traditional materials. In many markets, the actual or potential competitors are larger and more diversified than we are; however, we believe we focus in market segments and opportunities where our materials and related technologies are superior to those of our competitors, often due to our ability to produce highly engineered products to meet specific performance requirements and develop nanomaterial solutions for customers' specific applications.

With respect to traditional suppliers, we may compete against lower priced traditional materials for certain customer applications. In some product or process applications the benefits of using nanomaterials do not always outweigh their typically higher costs.

With respect to larger producers of nanomaterials, while many of these producers do not currently offer directly competitive products, these companies may have greater financial and technical resources, larger research and development staffs and greater manufacturing and marketing capabilities and could begin to compete directly against Nanophase. In addition, the number of development-stage companies involved in nanocrystalline materials continues to grow on a global basis, posing increasing competitive risks. Many of these companies are associated with university or national laboratories and use chemical and physical methods to produce nanocrystalline materials. We believe that most of these companies are engaged primarily in funded research and not commercial production; however, they may represent competitive risks in the future. Some development-stage companies, especially in other countries, receive significant government assistance or enjoy other benefits due to their location. We anticipate that foreign competition may play a greater role in the nanomaterials arena in the future.

We believe that our nanomaterial technologies and manufacturing platforms are currently at the forefront of nanomaterials production. We believe we are well positioned with our platform of integrated commercial nanomaterial technologies and track record of technology improvement and evolution.

## **Table of Contents**

### **Governmental Regulations, Including Climate Change**

The manufacture and use of certain of the products that contain the Company's nanocrystalline materials are subject to governmental regulations. As a result, the Company is required to adhere to the cGMP requirements of the U.S. Food and Drug Administration (FDA) and similar regulations that include testing, control and documentation requirements enforced by periodic inspections. Nanophase is also in the process of registering some of the chemicals it ships to customers in Europe in compliance with the European Chemical Agency's regulations issued to date pertaining to REACH.

Nanophase is committed to environmental health and safety (EH&S). We believe we comply with all applicable exposure limit standards issued by OSHA. Because nanotechnology remains an emerging and evolving science, there are no currently accepted standards, measurements or personal protective equipment available that are specific to nanoparticle safety. Accordingly, Nanophase relies on nuisance dust standards and general chemical safety practices to identify safe personal protective equipment and appropriate handling protocols. We believe that Nanophase has taken a leadership position on EH&S in our operations and fugitive emissions, and has internal and external review and monitoring of its practices.

In addition, the Company's facilities and all of its operations are subject to the plant and laboratory safety requirements of various environmental and occupational safety and health laws. We believe we are in compliance with all such laws and regulations, and to date, those regulations have not materially restricted or impeded operations. Further, we believe our processes to be highly efficient, generating very low levels of waste and emissions. For this reason, we do not view issues surrounding climate change and any currently foreseeable related regulations as materially impacting our business and financial statements, beyond any inestimable impact on the macro-economic environment.

Nanophase has taken a responsible, proactive approach to EH&S by implementing appropriate procedures and processes to have its facilities certified to ISO 14001, American National Standard, Environmental Management System Requirements. We are also involved with leading industry groups that are defining nanomaterial standards and protocols. These currently include the ASTM International Committee on Nanotechnology, Nanoscale Materials Stewardship Program under the Toxic Substances Control Act, the US TAG to ISO TC 229 Nanotechnology committee managed by the American National Standards Institute committee (ANSI). We also participate in FDA reviews relative to cosmetic applications. We have a full-time, advanced degreeed professional who spends a significant amount of time managing governmental regulation compliance and EH&S. We believe that the Company has an exemplary safety record.

### **Employees**

During the first quarter of 2009, we announced the resignations of Mr. Robert Haines, our then-current Vice-President of Operations, and Dr. Richard Brotzman, our then-current Chief Technology Officer. Additionally, we 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 our shift in strategy to develop a more customer-focused direct selling approach. Also during the first quarter of 2009, Mr. Jess Jankowski was appointed President and Chief Executive Officer. Mr. Jankowski had been our Acting Chief Executive Officer, and prior to that, our Chief Financial Officer.

During the second quarter of 2009, we hired Frank Cesario as our Chief Financial Officer.

During the fourth quarter of 2009, we appointed Mr. Glenn Judd to the position of Vice President of Operations. Mr. Judd had been the Company's Assistant Vice President of Operations since September 2008.

---

## **Table of Contents**

On December 31, 2009, we had a total of 42 full-time employees, 9 of whom hold advanced degrees. We have no collective bargaining agreements and believe that we have a strong relationship with our employees.

### **Backlog**

We do not believe that a backlog as of any particular date is indicative of future results. Our sales are primarily pursuant to purchase orders for delivery of our nanomaterials. Nanophase has some agreements that give customers the right to purchase a specific quantity of nanomaterials during a specified time period. These agreements, however, do not obligate the customers to purchase any minimum quantity of such nanomaterials. The quantities actually purchased by the customer, as well as the shipment schedules, are frequently revised during the agreement term to reflect changes in the customer's needs. For these reasons we do not believe that such agreements are meaningful for determining backlog amounts.

### **Business Segment and Geographical Information**

See Note 15 to the Financial Statements for additional information.

### **Key Customers**

A limited number of key customers account for a substantial portion of the Company's commercial revenue. In particular, revenue from three customers (one of which is also a market partner) - (1) our partner BASF, (2) our largest customer in architectural coatings and (3) our medical diagnostics customer constituted approximately 63%, 13% and 5%, respectively, of our 2009 total revenue. Many of our customers are significantly larger than we are and therefore may be able to exert a high degree of influence over us. While our agreement with BASF is a long-term agreement, it may be terminated by BASF under certain circumstances with reasonable notice and does not provide any guarantees that BASF will continue to buy our products. The loss of one of these key customers or the failure to attract new customers could have a material adverse effect on the Company's business, results of operations and financial condition. Due to the high concentration of sales to a limited number of customers, we have aggressively pursued a significant number of new customers, typically smaller entities, through our customer direct business model. To the extent we are successful in adding a large number of customers through this model and maintaining or expanding our existing partners, we believe we will be able to best manage the risks associated with customer concentration.

### **Forward-Looking Statements**

Nanophase wants to provide investors with more meaningful and useful information. As a result, this Annual Report on Form 10-K (the "Form 10-K") 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 2010 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, supply agreement or technology 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 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 ability of the Company to remain listed on NASDAQ; the Company's dependence on patents and protection of proprietary information; and the resolution of litigation in which the Company may become involved. Readers of this Annual Report on Form 10-K 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.

## **Table of Contents**

### **Investor Information**

The Company is subject to the informational requirements of the Securities Exchange Act of 1934 (the Exchange Act ) and, accordingly, files periodic reports, proxy statements and other information with the Securities and Exchange Commission (the SEC ). Such reports, proxy statements and other information may be obtained by visiting the Public Reference Room of the SEC at 450 Fifth Street, NW, Washington, DC 20549 or by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet site (<http://www.sec.gov>) that contains reports, proxy and information statements and other information regarding issuers that file electronically.

Financial and other information may also be accessed at the Company s web site. The address is [www.nanophase.com](http://www.nanophase.com). The Company makes available, free of charge, copies of its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after filing such material electronically with, or otherwise furnishing it to, the SEC, and intends to make all such reports and amendments to reports available free of charge on its web site.

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

Not required for a smaller reporting company.

### **Item 1B. Unresolved Staff Comments**

There are currently no open comments from the SEC Staff.

### **Item 2. Properties**

Nanophase operates a 36,000 square-foot production, research and headquarters facility in Romeoville, Illinois and a 20,000 square-foot production facility in Burr Ridge, Illinois. Both locations are in the Chicago suburbs. The Company also leases a 9,000 square-foot offsite warehouse in the same vicinity as the Romeoville facility.

The Company s manufacturing operations in Burr Ridge are certified under ISO 9001:2000, and we believe that our manufacturing operations are within the cGMP requirements of the FDA for products that require such compliance. The Company s facilities are also ISO 14001:2004 certified which is the international standard for environmental management. The Burr Ridge facility has a quality control laboratory designed for the dual purposes of validating operations to cGMP and ISO standards and production process control. This laboratory is equipped to handle many routine analytical and in-process techniques that are currently required.

The Romeoville facility houses the Company s headquarters, advanced engineering, manufacturing (nanoparticle coating, nanoparticle dispersion and pilot-scale manufacturing) and three applications development laboratories. All Romeoville manufacturing processes are certified to ISO 9001:2000 and ISO 14001:2004, and we believe that the manufacturing of nanoparticle coating used for sunscreens and personal care is in compliance with the cGMP requirements of the FDA.

**Table of Contents**

Nanophase leases both its Romeoville and Burr Ridge facilities. On October 18, 2005 Nanophase entered into a Lease Amendment amending its current lease for its facility in Romeoville, Illinois, which, among other things, extended the term of such lease through December 31, 2015 (with the option to extend the term for two additional five year periods) and granted Nanophase an option to purchase such facility in certain instances. The Company renewed its Burr Ridge facility lease in September 2007 (with the option to extend the term for three additional one-year periods). The Company exercised its option to extend the lease for one year, which expires in September 2010. We intend to renew this lease before its expiration in September 2010.

We believe that our leased facilities provide sufficient capacity to fulfill current known customer demand as well as substantial additional space to enable expansion of key production processes. We believe that our capital expenditures made in 2009, and projected for 2010, will support currently anticipated demand from existing customers. Our actual future capacity requirements will depend on many factors, including new and potential customer acceptance of our current and potential nanomaterials and product applications, both expected and currently unplanned growth from existing customers, continued progress in our research and development activities and product testing programs and the magnitude of these activities and programs.

**Item 3. Legal Proceedings**

As discussed in Note 4 of the accompanying financial statements, pursuant to the applicable rules of FINRA, during 2009 we filed an arbitration demand against Credit Suisse, the Company's investment advisor with respect to our ARS (auction rate securities) investments. The hearing on our arbitration had been scheduled for April 2010. Pursuant to an agreement between the parties executed during March 2010, Credit Suisse agreed to purchase our remaining ARS holdings for \$4 million on or before March 31, 2010, and we agreed not to seek reimbursement for the \$280,000 loss realized on the sale of another ARS bond or for legal and other costs. Under this agreement, the arbitration will not proceed and our arbitration claim has been resolved.

**Item 4. Removed and Reserved**

**Table of Contents****PART II****Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities  
Market Information; Holders; Dividends**

The Company's common stock is traded on the NASDAQ Global Market under the symbol NANX. The following table sets forth, for the periods indicated, the range of high and low sale prices for the common stock on the NASDAQ Global Market:

	High	Low
Fiscal year ended December 31, 2009:		
First Quarter	\$ 1.40	\$ 0.71
Second Quarter	1.43	0.80
Third Quarter	1.20	0.86
Fourth Quarter	1.25	0.76
Fiscal year ended December 31, 2008:		
First Quarter	\$ 4.17	\$ 3.73
Second Quarter	3.67	2.09
Third Quarter	2.44	1.17
Fourth Quarter	1.93	0.76

On March 15, 2010, the last reported sale price of the Company's common stock was \$.82 per share, and there were approximately 143 holders of record of the common stock. On December 18, 2009, we received notice from the NASDAQ Stock Market that the closing bid price of our common stock had fallen below \$1.00 for thirty consecutive business days and as a result, we are currently not in compliance with NASDAQ Listing Rule 5450(a)(1). We have a 180-day grace period, ending June 16, 2010, to regain compliance with the Rule. To regain compliance, the bid price for the Company's common stock must close at \$1.00 or higher for a minimum of 10 consecutive business days within the stated 180-day grace period. We have not yet determined what action, if any, of those available to us we would take in the event that we do not regain compliance within the allotted time.

The Company has never declared or paid any cash dividends on its common stock and does not currently anticipate paying any cash dividends or other distributions on its common stock in the foreseeable future. The Company intends instead to retain any future earnings for reinvestment in its business. Any future determination to pay cash dividends will be at the discretion of the Company's Board of Directors and will be dependent upon the Company's financial condition, results of operations, capital requirements and such other factors deemed relevant by the Board of Directors.

On August 25, 2006, the Company sold, in a private placement to Rohm and Haas Electronic Materials CMP Holdings, Inc. (RHEM), which is now part of Dow), 847,918 shares of common stock at \$5.8968 per share and received gross proceeds of \$5.0 million. The Company registered the common stock held by RHEM by way of a Form S-3 filed on November 25, 2009, amended on January 22, 2010, and declared effective as of February 1, 2010.

**Table of Contents****Securities Authorized for Issuance under Equity Compensation Plan**

The following table gives information about our common stock that may be issued upon the exercise of options and rights under all of our existing compensation plans on December 31, 2009, including the 1992 Amended and Restated Stock Option Plan and the 2001 and the Amended 2004 Equity Compensation Plan and the 2005 Non-Employee Director Restricted Stock Plan.

<b>Plan Category</b>	<b>(a) Number of Securities to be Issued Upon Exercise of Outstanding Options and Rights</b>	<b>(b) Weighted Average Exercise Price of Outstanding Options and Rights</b>	<b>(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))</b>	<b>(d) Total of Securities Reflected in Columns (a) and (c)</b>
Plans Approved by Shareholders	1,046,075(1)	\$ 4.13	654,805(2)	1,700,880
Plans Not Approved by Shareholders	None	\$	None	

- (1) Consists of the 1992 Amended and Restated Stock Option Plan, the 2001 and the Amended 2004 Equity Compensation Plans and shares of authorized but unissued Preferred Stock.
- (2) Consists of shares available for future issuance under the Amended 2004 Equity Compensation Plan and the 2005 Non-Employee Director Restricted Stock Plan.

**Item 6. Selected Financial Data**

Not required for a smaller reporting company.

**Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

*The following discussion and analysis should be read in conjunction with risks discussed in other filings made by the Company with the Securities and Exchange Commission, and the financial statements and related notes thereto appearing elsewhere in this Form 10-K. When used in the following discussions, the words anticipates, believes, estimates, expects, plans, intends and similar expressions are intended to identify forward-looking statements. Such statements are subject to certain risks, uncertainties and contingencies that could cause actual results, performance or achievements to differ materially from those expressed in, or implied by, such statements. See the Forward Looking Statements section in Part I, Item 1.*

---

## **Table of Contents**

### **Overview**

Nanophase is a nanomaterials 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, plastics additives, water filtration, DNA biosensors 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, including our first complete product line in the Architectural Windows Cleaning market under the trade name NanoUltra . We work closely with leaders in our target markets to identify their material and performance requirements, and then market material solutions for various end-use applications. More recently developed technologies have made certain new products possible and opened potential new markets. We have added a large number of potential customers to our sales funnel during the past year, many with new potential applications for our material technologies, and are in various stages of qualification with them. Some of these qualification cycles may take as little as 6-12 months, while others may take years. There can be no assurance that we will be successful in securing these potential customers or in completing the qualification process with them, or that these relationships will translate into meaningful revenues for the Company.

On August 25, 2006, the Company sold, in a private placement to Rohm and Haas Electronic Materials CMP Holdings, Inc. ( RHEM , now part of Dow), 847,918 shares of common stock at \$5.90 per share and received gross proceeds of \$5.0 million. In accordance with our agreement, we filed a registration statement for these shares on Form S-3 on November 25, 2009, which was amended on January 22, 2010 and deemed effective as of February 1, 2010.

Our revenue depends largely on the performance of the consumer products and exterior coatings markets. Both have been severely impacted by the global recession and the focus of firms that are or might be our customers has been to reduce their inventories and focus on cheaper products that are less likely to contain our higher performance materials. While we believe we will benefit from an anticipated reversal of this trend, it is our intention to broaden our market reach, which is expected to reduce excessive reliance on any particular customer or industry. We are doing this by addressing several market segments with targeted solutions.

### **Critical Accounting Policies**

Investments are classified by the Company at the time of purchase for appropriate designation and are reevaluated as of each balance sheet date. Our policy is to classify money market funds, certificates of deposit and similar assets, with maturities at time of purchase of 90 days or less, as cash equivalents, while longer maturities and other assets are deemed to be investments. These investments are classified as held-to maturity when we have the positive intent and ability to hold the securities to maturity. Held-to maturity securities are stated at amortized cost and are adjusted to maturity for the amortization of premiums and accretion of discounts. Such adjustments for amortization and accretion are included in interest income.

As of March 5, 2010, we held investments in auction rate securities ( ARS ) totaling \$3.56 million, net of other than temporary impairment, as of March 5, 2010. These ARS holdings 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 may be above market rates for other types of similar short-term instruments. Despite these failed auctions, there were no defaults on the underlying securities and investment income on these ARS holdings. They were 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 \$4 million value by the Department of Education. However, these failed auctions caused us to change the level of inputs to determine their fair values. The values of these 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 3 to the accompanying financial statements). As a result, for the period ending December 31, 2008, we recognized an other than temporary impairment loss on these ARS s in the amount of \$660,000 which was reflected in the 2008 statement of operations. We sold \$2 million of these securities during 2009, leaving \$4 million of gross value and \$440,000 of related other than temporary impairment on our balance sheet as of December 31, 2009. Our valuation models assumed an average maturity of the ARS s in excess of one year, therefore, we classified these securities as long-term on the December 31, 2008 balance sheet and would have done so again if not for the subsequent event below, which changed their classification to current on our December 31, 2009 balance sheet.



## **Table of Contents**

Subsequent to the reporting date, we entered into an agreement to sell the remaining ARS to Credit Suisse for \$4 million on or before March 31, 2010. Consequently, we recorded a recovery of expense (other income) and a related current receivable in our December 31, 2009 financial statements in the amount of \$440,000. We also classified the underlying securities, to be sold on or before March 31, 2010 pursuant to this agreement, as current assets. See Note 4 of the accompanying financial statements for additional information regarding this agreement.

See Note 3 of the accompanying financial statements for more detail pertaining to the valuation of these securities.

See Note 2 of the accompanying financial statements Summary of Significant Accounting Policies, for a further discussion of liquidity issues.

## **Results of Operations**

### **Years Ended December 31, 2009 and 2008**

Total revenue decreased to \$6,320,326 in 2009, compared to \$10,213,817 in 2008. A substantial majority of our revenue for the year ended December 31, 2009 is from our largest customers. See Note 14 to the Financial Statements for additional information regarding revenue from these customers for the year ended December 31, 2009. Product revenue, the primary component of our total revenue, decreased to \$5,937,100 in 2009, compared to \$9,744,759 in 2008. The decrease in product revenue was primarily attributed to decreased sales to our largest customers, including aggressive inventory reduction programs that have been felt across our and many other industries.

Other revenue decreased to \$383,226 in 2009, compared to \$469,058 in 2008. This decrease was primarily attributed to recognizing revenue in connection with a promissory note to BYK Chemie that was fully repaid during July 2009, and from an evaluation agreement with a customer during 2008.

The majority of the total revenue generated during the year ended December 31, 2009 was from BASF Corporation, the Company's largest customer/partner. Other large customers purchased materials for applications in architectural coatings and medical diagnostics.

Cost of revenue generally includes costs associated with commercial production and customer development arrangements. Cost of revenue decreased to \$5,368,719 in 2009, compared to \$7,501,468 in 2008. The decrease in cost of revenue was generally attributed to decreased revenue volume, along with the reduction in manufacturing overhead and the continued efficiencies in reducing our remaining variable manufacturing costs for nanomaterials. These decreases were partially offset by inefficiencies due to decreased utilization of production assets. We expect to continue new nanomaterial development, primarily using our NanoArc<sup>®</sup> synthesis and dispersion technologies, for targeted applications and new markets during 2010 and beyond. Even 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 eliminated twelve positions within the Operations group as a result of a cost savings initiative implemented in the first quarter of 2009 that we expect will have a positive near-term impact on margins. We believe that our 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 margins continue to grow, as a percentage of total revenue, will be dependent upon revenue mix, revenue volume, our ability to manage costs and our ability to pass commodity market-driven raw materials increases on to customers. With product revenue volume increases, more of our fixed manufacturing costs would be absorbed, which should lead to increased margins. We expect to continue to focus on reducing controllable variable product manufacturing costs through 2010 and beyond, with potential offsetting increases in the commodity metals markets. We expect to see absolute dollar gross margin growth through 2010 and beyond, but this expectation is dependent upon the factors discussed above and therefore may or may not occur as expected.

**Table of Contents**

Research and development expense, which includes all expenses relating to the technology and advanced engineering groups, primarily consists of costs associated with the development or acquisition of new product applications and coating formulations and the cost of enhancing the Company's manufacturing processes. 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. We have also extended our efforts to produce our first complete product line of Architectural Window cleaning products – the NanoUltra family.

Now that we have 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 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 decreased to \$1,615,894 in 2009, compared to \$1,764,284 in 2008. The decrease in research and development expense was largely attributed to reduction in salary and stock compensation (non-cash) expenses after our restructuring efforts during 2008 and 2009. We do not expect research and development expense to increase significantly in 2010.

Selling, general and administrative expense decreased to \$3,852,737 in 2009, compared to \$5,390,771 in 2008. The net decrease, quantified for the twelve month period, was primarily attributed to decreases in salary expense following our 2008 and 2009 restructuring efforts (\$841,000), legal fees (\$298,000) and non-cash stock compensation (\$205,000) expenses.

In the first quarter of 2009, we announced the resignations of Mr. Robert Haines, our then-current Vice-President of Operations, and Dr. Richard Brotzman, our then-current Chief Technology Officer. Additionally, we 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, we have continued to seek to build our marketing and applications development capabilities. As a result of the above resignations, we 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 options which have no cash impact and are expected to have a minimal dilutive effect if any. We believe that the impact of all cost savings and realignment measures implemented during 2008 and 2009 will be an annual savings of approximately \$2 million.

Interest income decreased to \$89,615 in 2009, compared to \$383,083 in 2008. The decrease was primarily due to severely decreased investment yields and decreases in funds available for investment.

---

## **Table of Contents**

### **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 2010 and beyond, particularly if we are unable to pass through any applicable increases.

### **Liquidity and Capital Resources**

Our cash, cash equivalents and short-term investments amounted to \$3,933,997 as of December 31, 2009, compared to \$7,631,957 on December 31, 2008. On June 30, 2008, we reclassified our auction rate securities (ARS) in the amount of \$6 million from current to long-term investments. Additional discussion on these auction rate securities is below. The net cash used in the Company's operating activities was \$3,614,979 and \$2,560,783 for the years ended December 31, 2009 and 2008, respectively, which is a result of a significant decrease in revenue (approximately \$3.9 million) as well as the payment of restructuring costs, partially offset by certain cost savings initiatives described previously. 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 \$8,410,937 for the year ended December 31, 2009 compared to \$2,733,471 of net cash used for the year ended December 31, 2008. Capital expenditures amounted to \$171,721 and \$499,967 for the years ended December 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 \$1,619,634 for the year ended December 31, 2009 compared to \$12,694 for the same period in 2008.

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 million, in order to avoid triggering a transfer of certain technology and sale of related equipment to this customer. We believe it is in our best interest to avoid such a transfer. We had approximately \$3.9 million in cash, cash equivalents and current investments (excluding ARS) on December 31, 2009. In addition, we had a gross value of \$4 million of ARS, \$3.56 million net of an other than temporary impairment, as of that date that might be sold or otherwise used to obtain cash. A \$2 million ARS note was sold for \$1.72 million of proceeds which were received during the fourth quarter 2009, as discussed below. Additionally, we reported that, subsequent to the reporting date, we entered into an agreement to sell the remaining ARS to Credit Suisse for \$4 million, thus improving our position with respect to this covenant. Our debt position renders the acceleration issue inapplicable to our current situation; and in fact we became debt-free when our final loan payment was made during July 2009. This supply agreement and its covenants are more fully described in Note 14 to our Financial Statements.

For many reasons, our cash position has decreased significantly during the past year. Customers have more aggressively reduced their inventories, which has decreased our order flow. We have started to see this pattern reverse slightly, but customers remain very concerned about managing inventory levels. We have also seen certain customers more inclined to focus on cost than performance, which has impeded new formulation development that may include our materials, as well as pressure on existing customers to reduce the amount of material purchased from us in an attempt to control short term costs. In addition, we have expended significant efforts in trying to qualify for new markets. While we believe this to be the right course of action for future revenue growth, the early stages of this process tend to result in trial activity, which we expect to become commercial revenue over time. Some industries require two or more years of qualification prior to potential acceptance. For this reason we have begun the qualification process with several potential customers in a number of industries, and continue to look for market applications for which we can begin this qualification process. There can be no assurance that we will be successful in our qualification efforts, or that such efforts will result in increased Company revenues. We also repaid \$1.6 million in debt during 2009, with our final payment made in July 2009. While these payments have reduced our cash position, they have left us debt-free as of July 2009, and the lack of these payments in the future will reduce the related cash outflows we experienced during 2009.

## Table of Contents

We adapted our business during the past twelve months by reducing work force and overhead in a manner designed to make us more lean and efficient. This has reduced the cost of running our business, which should become even more apparent once severance payments have concluded in February 2010 (see Note 16 on severance). This cost reduction has helped us withstand the drop in our commercial revenue from 2008 levels through 2009, and we expect this more efficient structure will help optimize our financial performance with anticipated increases in revenue.

We believe that cash from operations, cash and equivalents and investments on hand, including the value of the ARS portfolio (particularly in light of the sale of this portfolio completed during March 2010), will be adequate to fund our operating plans through 2010. Our actual future capital requirements in 2010 and beyond will depend, however, on many factors, including customer acceptance of our current and potential nanomaterials and product applications, continued progress in our research and development activities and product testing programs, the magnitude of these activities and programs, and the costs necessary to increase and expand our manufacturing capabilities and to market and sell our materials and product applications. Other important issues that will drive future capital requirements will be the development of new markets and new customers as well as the potential for significant business growth with existing customers. We expect that capital spending relating to currently known capital needs for 2010 will be approximately \$300,000.

In October 2009 we sold one of our ARS investments, a Connecticut Student Loan Foundation bond (see Note 4) pursuant to a reverse auction tender offer initiated by the Connecticut Student Loan Foundation. Our net proceeds were \$1.72 million, which is reflected in our cash balance as of December 31, 2009. We had been seeking the difference between the net proceeds and the \$2 million par value as part of our damages in the FINRA claim against Credit Suisse noted below, which was subsequently resolved in a settlement executed in March 2010. This note was valued, net of other than temporary impairment, at \$1.78 million at the time of its sale. We accounted for the additional \$60,000 loss on sale as an expense in our statement of operations for 2009.

As of March 5, 2010, our remaining investments in ARS totaled \$3.56 million, net of other than temporary impairment. These ARS holdings 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. 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 and carry an AAA credit rating. These FFELPs Loans are guaranteed to 97% of their \$4 million value by the Department of Education. However, these failed auctions have caused us to change the level of inputs to determine their fair values. These values were estimated as of December 31, 2009 and 2008 by an independent appraisal firm, Houlihan, Smith & Company, Inc., using a discounted cash flow model. Since these inputs were not observable they are classified as Level 3 inputs (see Notes 3 and 4). As a result, for the period ended December 31, 2008, we recognized an other than temporary impairment loss on the ARS in the amount of \$660,000, thus reducing the \$6 million in nominal value to \$5.34 million in net carrying value. One of the underlying securities was then sold during October 2009, leaving \$4 million in gross value, \$3.56 million net of other than temporary impairment, in our ARS portfolio. Our appraisal firm updated its analysis during the fourth quarter of 2009 for the remaining two ARS securities we currently hold, and determined that the fair value estimates made for the year ended December 31, 2008 have not changed through December 31, 2009, and therefore, recommended no changes to the carrying value of these investments be made. We have reviewed and agreed with that analysis, and therefore have maintained the net value of these securities at \$3.56 million. We monitored the creditworthiness of the companies underwriting these securities and made any adjustments we deemed necessary to reflect the fair value of these securities.

## **Table of Contents**

It has been our intention to sell these instruments for as close to their \$4 million value as possible as soon as we were able to do so. However, because we could not ascertain when we would ultimately sell these instruments, and they have nominal maturity in excess of one year, we would have classified these securities as long-term on the December 31, 2009 balance sheet if not for the subsequent event described below.

Pursuant to the applicable rules of FINRA, we filed an arbitration demand against Credit Suisse, the Company's investment advisor with respect to our ARS investments. The hearing on our arbitration had been scheduled for April 2010. Pursuant to an agreement between the parties executed during March 2010, Credit Suisse agreed to purchase our remaining ARS holdings for \$4 million on or before March 31, 2010, and we agreed not to seek reimbursement for the \$280,000 loss realized on the sale of another ARS bond or for legal and other costs. Under this agreement, the arbitration will not proceed and our arbitration claim has been resolved.

Should events arise that make it appropriate for us to seek additional financing, such additional financing may not be available on acceptable terms or even at all, and any such additional financing could be dilutive to our stockholders. Such 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 December 31, 2009, we had a net operating loss carryforward of approximately \$80 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 carryforward expired in 2008 and another is expected to expire in 2009. If not utilized, the remaining carryforward will expire at various dates between January 1, 2010 and December 31, 2029. 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.

## **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.

## **Table of Contents**

### **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. We believe we have sufficient liquidity from our cash and investment accounts to satisfy 2010 operational needs. See Notes 2 and 3 to the financial statements, Summary of Significant Accounting Policies for a further discussion of liquidity issues.

### **Item 7A. Quantitative and Qualitative Disclosures About Market Risk**

Not required for a smaller reporting company.

### **Item 8. Financial Statements and Supplementary Data**

The financial statements, with the report of independent auditors, listed in Item 15 are included in this Form 10-K.

### **Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure**

None.

### **Item 9A (T). Controls and Procedures**

**Evaluation of Disclosure Controls and Procedures.** An evaluation of the effectiveness of the design and operation of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act)) as of December 31, 2009 was conducted under the supervision and with the participation of the Company's management, including Jess Jankowski, the Chief Executive Officer (CEO) and Frank Cesario, the Chief Financial Officer (CFO). Based on that evaluation, Mr. Jankowski and Mr. Cesario concluded that the Company's disclosure controls and procedures were effective as of such date to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's 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 accumulated and communicated to the management, including the CEO and CFO, as appropriate to allow timely decisions regarding required disclosures.

**Management's Annual Report on Internal Control Over Financial Reporting.** Management is responsible for the preparation, integrity and fair presentation of the financial statements and Notes to the financial statements. The financial statements were prepared in accordance with the accounting principles generally accepted in the U.S. and include certain amounts based on management's judgment and best estimates. Other financial information presented is consistent with the financial statements.

Management is also responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934. The Company's internal control over financial reporting is designed under the supervision of the Company's principal executive and financial officers in order to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The Company's internal control over financial reporting includes those policies and procedures that:

- (i) Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of assets of the Company;



**Table of Contents**

(ii) Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and

(iii) Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2009. In making this assessment, management used the criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on our assessment and those criteria, management believes that the Company maintained effective internal control over financial reporting as of December 31, 2009.

This annual report does not include an attestation report of the Company's registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by the Company's registered public accounting firm pursuant to temporary rules of the Securities and Exchange Commission that permit the company to provide only management's report in this annual report.

Changes in Internal Control over Financial Reporting. The Company's management, including Mr. Jankowski, the CEO, and Mr. Cesario, the CFO, confirms that there was no change in the Company's internal control over financial reporting during the quarter ended December 31, 2009 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

**Item 9B. Other Information**  
**Entry into a Material Definitive Agreement**

On March 26, 2010, the Company and Credit Suisse Securities (USA) LLC (Credit Suisse) entered into a Confidential General Release of Claims and Settlement Agreement (the Settlement Agreement). Pursuant to this Settlement Agreement, Credit Suisse agreed to purchase our remaining ARS holdings for \$4 million, and we agreed to dismiss the arbitration initiated by us against Credit Suisse and to release all claims arising out of the transactions which formed the basis for the arbitration or related to our account with Credit Suisse, including, but not limited to, our claim to recoup the \$280,000 loss realized on the sale of another ARS bond.



**Table of Contents****PART III****Item 10. Directors, Executive Officers and Corporate Governance****DIRECTORS**

Set forth below is certain information regarding the directors of the Company.

Name	Age	Position with Company	Served as Director Since	Term Expires	Class
James A. Henderson	75	Director	2001	2010	I
James A. McClung, Ph.D.	72	Director	2000	2010	I
R. Janet Whitmore	55	Director	2003	2010	I
Jess A. Jankowski	44	Director	2009	2011	II
Richard W. Siegel, Ph.D.	72	Director	1989	2011	II
George A. Vincent, III	65	Vice Chairman of the Board of Directors	2007	2012	III
Donald S. Perkins	82	Chairman of the Board of Directors	1998	2012	III
Jerry K. Pearlman	70	Director	1999	2012	III

**Mr. Henderson** has served as a director of the Company since July 2001. He retired as Chairman and Chief Executive Officer of Cummins Engine Company (now Cummins Inc.) in December 1999, after joining the company in 1964. Mr. Henderson became President and Chief Operating Officer of Cummins in 1977, was promoted to President and Chief Executive Officer in 1994 and served as Chairman and Chief Executive Officer from 1995 until his retirement in 1999. Mr. Henderson attended Culver Military Academy, holds an A.B. in public and international affairs from Princeton University and an M.B.A. from Harvard Business School. Mr. Henderson also currently serves as a member of the Board of Directors of Hillenbrand, Inc. Mr. Henderson previously served as a director of AT&T, Inc., International Paper, Rohm & Haas and Ryerson, Inc. He serves as Chairman of the Board of the Culver Education Foundation and is a past Chair of the Executive Committee of the Princeton University Board of Trustees. The Company believes that Mr. Henderson's extensive and diverse background in corporate leadership in technology-based companies, operations experience, and business acumen makes him a valuable member of its Board of Directors.

**Mr. McClung** has served as a director of the Company since February 2000. Currently he is Chairman/CEO of Lismore International. He retired as Senior Vice President and executive officer for FMC Corporation (which has since been split into three public corporations: 1) FMC, 2) FMC Technology and 3) John Bean Technologies), a leading producer of a diversified portfolio of chemicals and machinery. He has over 30 years of international business development experience in over 75 countries, having managed and developed new technologies and production processes for diversified global businesses, including specialized chemicals and machinery, while living in the United States, Europe and Africa. Mr. McClung currently serves as Corporate Board member of Alticor (Amway), NCCI and Hu-Friedy. He was a founding member of the U.S.-Russia Business Council and is active in other international business organizations, such as the Japan American Society, Chicago Council on Global Affairs, Executive Club of Chicago, and the Economic Club of Chicago. He serves as a board director at Thunderbird School of Global Management and the College of Wooster (Ohio). Mr. McClung earned a Bachelor's degree from the College of Wooster, a Master's degree from the University of Kansas and a Doctorate from Michigan State University. The Company believes that Mr. McClung's extensive global business development and worldwide management experience, including his experience in the specialty chemicals industry, make him a valuable member of its Board of Directors.

**Ms. Whitmore** joined the board in November 2003. She is a former director of Silverleaf Resorts, Inc., where she served as Chairman of the Compensation Committee and as a member of the Audit Committee. She is also a former director of Epoch Biosciences, a supplier of proprietary products used to accelerate genomic analysis. Ms. Whitmore is Founder of Benton Consulting, LLC, which specializes in business development and processes. From 1976 through 1999, Ms. Whitmore held numerous engineering and finance positions at Mobil Corporation, including Mobil's Chief Financial Analyst and Controller of Mobil's Global Petrochemicals Division. Ms. Whitmore holds a B.S. degree in

## Edgar Filing: NANOPHASE TECHNOLOGIES CORPORATION - Form 10-K

Chemical Engineering from Purdue University and an M.B.A. from Lewis University. The Company believes that Ms. Whitmore's combination of global financial, engineering, and management expertise makes her a valuable member of its Board of Directors.

**Mr. Jankowski** joined the board in February 2009. He has served as Controller of the Company since joining in 1995 until September 2008. He was elected Secretary and Treasurer in November 1999, Acting Chief Financial Officer in January 2000, Vice President in April 2002, Vice President of Finance and Chief Financial Officer in April 2004 and President and Chief Executive Officer in February 2009. From 1990-1995 he served as Controller for two building contractors in the Chicago area, during which time he had significant business development responsibilities. From 1986 to 1990 he worked for Kemper Financial Services in their accounting control corporate compliance unit, serving as unit supervisor during his last two years. Mr. Jankowski holds a B.S. from Northern Illinois University and an M.B.A. from Loyola University. He has served on the TechAmerica Midwest Board since 2008 and was an active member of the TechAmerica Midwest CFO Committee from 2006 through 2008. He was appointed to the Advisory Board of the Nanobusiness Alliance in 2009. Mr. Jankowski was appointed to the Romeoville Economic Development Commission in 2004. He has also served on the advisory board of NITECH (Formerly WESTEC), an Illinois Technology Enterprise Center focusing on the commercialization of advanced manufacturing technologies from 2003 to 2008. The Company believes that Mr. Jankowski's long-term and intimate experience with Nanophase operations, along with his financial and management expertise makes him a valuable member of its Board of Directors.

**Table of Contents**

**Dr. Siegel** is a co-founder of the Company and has served as a director of the Company since 1989. Dr. Siegel served as a consultant to the Company from 1990 to 2002 with regard to the application and commercialization of nanomaterials. Dr. Siegel is an internationally recognized scientist in the field of nanomaterials. During his tenure on the research staff at Argonne National Laboratory from July 1974 to May 1995, he was the principal scientist engaged in research with the laboratory-scale synthesis process that was the progenitor of the Company's physical-vapor-synthesis production system. Dr. Siegel has been the Robert W. Hunt Professor in Materials Science and Engineering at Rensselaer Polytechnic Institute since June 1995, and served as Department Head from 1995 to 2000. In April 2001, Dr. Siegel became the founding Director of the newly created Rensselaer Nanotechnology Center at the Institute. During 1995-1998, he was also a visiting professor at the Max Planck Institute for Microstructure Physics in Germany on an Alexander von Humboldt Research Prize received in 1994. During 2003-2004 he was a visiting professor in Japan on a RIKEN Eminent Scientist Award. He chaired the World Technology Evaluation Center worldwide study of nanostructure science and technology for the U.S. government, has served on the Council of the Materials Research Society and as Chairman of the International Committee on Nanostructured Materials. He also served on the Committee on Materials with Sub-Micron Sized Microstructures of the National Materials Advisory Board and was the co-chairman of the Study Panel on Clusters and Cluster-Assembled Materials for the U.S. Department of Energy. He served on the Nanotechnology Technical Advisory Group to the U.S. President's Council of Advisors on Science and Technology during 2003-2009. Dr. Siegel holds an A.B. degree in physics from Williams College and an M.S. degree and Ph.D. from the University of Illinois at Urbana-Champaign. The Company believes that Dr. Siegel's value to its Board of Directors, as co-founder of the Company and inventor of its initial base technology, is self-explanatory.

**Mr. Vincent** has served as a Director of the Company since November 2007. In August 2008, he was appointed as Vice Chairman of the Company's Board of Directors. He is currently Chairman and Commercial Development Officer of The HallStar Company, where he served as CEO for twenty years. HallStar is a chemical manufacturer and innovator specializing in material science, marketing its products worldwide, primarily into the polymer and personal care industries. Prior to HallStar, Mr. Vincent held positions in purchasing, sales, commercial development and strategic planning with FMC Corporation (chemicals) and General Electric Company (chemicals and plastics). Mr. Vincent has served as Chairman of the Illinois Manufacturers' Association (IMA) and the Chemical Industry Council of Illinois (CICI), as well as Director of the American Chemistry Council (ACC). Mr. Vincent serves on the Boards of several closely-held companies in the chemicals and materials industry sector. Mr. Vincent holds a Bachelor of Science degree in Chemistry from Dartmouth College and an M.B.A. degree from Harvard Business School. The Company believes that Mr. Vincent's extensive experience in the chemicals industry and management leadership makes him a valuable member of its Board of Directors.

## **Table of Contents**

**Mr. Perkins** has served as a director of the Company since February 1998. Mr. Perkins retired from Jewel Companies, Inc., the retail supermarket and drug chain, in 1983. He had been with Jewel since 1953, serving as President from 1965 to 1970, as Chairman of the Board of Directors from 1970 to 1980, and as Chairman of the Executive Committee until his retirement. He has served on a number of corporate boards and is currently a director of LaSalle Hotel Properties and La Salle U.S. Realty Income and Growth Fund III. For more than 30 years, he has served on corporate boards including AT&T, Aon, Corning, Cummins Engine, Eastman Kodak, Firestone, Inland Steel Industries, Kmart, Lucent Technologies, The Putnam Funds, Springs Industries and Time-Warner, Inc. He has served as a Trustee of The Ford Foundation and The Brookings Institution, as a member of The Business Council and as a Protector of the Thyssen-Bornemisza Continuity Trust. Mr. Perkins is a life trustee and was Vice Chairman of the Board of Trustees of Northwestern University. He is also a member of the Civic Committee of The Commercial Club of Chicago, and Advisory Boards for Blue Ridge Partners, Shields-Meneley, RoundTable Healthcare Partners L.P., Northwestern University's School of Communication and its School of Education and Social Policy. Mr. Perkins holds a B.A. degree from Yale University and an M.B.A. degree from the Harvard Graduate School of Business Administration. The Company believes that Mr. Perkins extensive resume of corporate leadership, including Board service, makes him a valuable member of its Board of Directors.

**Mr. Pearlman** has served as a director of the Company since April 1999. Mr. Pearlman retired as Chairman of Zenith Electronics Corporation in November 1995. He joined Zenith as controller in 1971 and served as chief executive officer from 1983 through April 1995. Mr. Pearlman is currently a director of Smurfit Stone Container Corporation. He is a life trustee of Northwestern University and a life director and past chairman of the board of Evanston Northwestern Healthcare. Mr. Pearlman graduated from Princeton with honors from the Woodrow Wilson School and from Harvard Business School with highest honors. The Company believes that Mr. Pearlman's extensive financial and leadership experience make him a valuable member of its Board of Directors.

**Meetings of the Board and Committees** During the year ended December 31, 2009, the Board of Directors held eight formal meetings. No director missed more than one board and committee meeting held during 2009 (for all committees on which a particular director served).

**Committees of the Board of Directors** The Board of Directors has established an Audit and Finance Committee, Compensation and Governance Committee and a Nominating Committee, each comprised entirely of independent directors who are not officers or employees of the Company. The members of the Audit and Finance Committee are Mr. McClung (Chairman), Mr. Pearlman, Mr. Perkins and Mr. Vincent. The members of the Compensation and Governance Committee are Mr. Pearlman (Chairman), Mr. Henderson, Mr. Perkins and Mr. Vincent. The members of the Nominating Committee are Mr. Henderson (Chairman), Mr. McClung, Mr. Pearlman, Mr. Perkins, Dr. Siegel and Mr. Vincent.

The Audit and Finance Committee generally has responsibility for retaining the Company's independent public auditors, reviewing the plan and scope of the accountants' annual audit, reviewing the Company's internal control functions and financial management policies and reporting to the Board of Directors regarding all of the foregoing. The Audit and Finance Committee held six formal meetings in 2009. The Board of Directors has determined that Mr. Pearlman and Mr. Perkins are audit committee financial experts as described in applicable SEC rules. Each member of the Audit and Finance Committee is independent, as defined in Rule 4200(a) (15) of the National Association of Securities Dealers' listing standards and applicable SEC rules.

The Compensation and Governance Committee generally has responsibility for establishing executive officer and key employee compensation, reviewing and establishing the Company's executive compensation and general corporate governance policies and reporting to the Board of Directors regarding the foregoing. The Compensation and Governance Committee also has responsibility for administering the Amended 2004 Equity Compensation Plan and the 2006 Stock Appreciation Rights Plan, determining the number of options, if any, to be granted to the Company's employees and consultants pursuant to the Amended 2004 Equity Compensation Plan and reporting to the Board of Directors regarding the foregoing. The Compensation and Governance Committee held four formal meetings in 2009.

**Table of Contents**

The Nominating Committee generally has responsibility for nominating candidates to serve on the Board of Directors. All members of the Nominating Committee are independent. The Nominating Committee was formed in 2004 and held one formal meeting in 2009.

The Board of Directors considers its role in risk oversight to focus primarily on evaluating risk at the entity and strategic levels, with management primarily responsible for managing day-to-day risk factors and presenting summary materials for those positions to the Board of Directors. Consistent with this philosophy, the Board of Directors has no formal policy as to whether the roles of Chief Executive Officer and Chairman should be segregated or combined. The Board of Directors considers the circumstances of the Company and makes a determination as to the appropriate leadership structure for the Company at that time. As of the time of this filing, the positions of CEO and Chairman are held by two individuals – Mr. Perkins serves as Chairman and Mr. Jankowski serves as CEO. Mr. Perkins brings extensive experience in corporate leadership from his own working experience and from the many Boards on which he serves or has served in the past, and Mr. Jankowski, in his relatively new role as CEO, is expected to benefit from that experience. The Board of Directors believes that is the most appropriate structure for the Company at this time.

The Board of Directors does not have a stated policy regarding diversity. The Board seeks experienced individuals for service who bring extensive experience in leadership, operations, finance, and engineering, particularly in areas directly applicable to the Company or its intended future endeavors.

**EXECUTIVE OFFICERS**

Set forth below is certain information regarding the named executive officers of the Company as of the date of this Form 10-K who are not identified above as directors.

<b>Name</b>	<b>Age</b>	<b>Position</b>
Frank Cesario	40	Chief Financial Officer
David Nelson	42	Vice President - Sales and Marketing
Nancy Baldwin	58	Vice President - Human Resources and Investor Relations
Patrick Murray, Ph.D.	43	Vice President - Research and Development
H. Glenn Judd	41	Vice President - Operations

**Mr. Cesario** joined the Company in June 2009 as Chief Financial Officer. He brings more than 10 years of CFO and controller experience at manufacturing entities. Prior to joining Nanophase, Mr. Cesario served in a similar capacity with ISCO International, Inc., a publicly traded global supplier of telecommunications equipment, as well as Turf Ventures LLC, a privately held chemicals distributor. He began his career with KPMG Peat Marwick and then served in progressively responsible finance positions within Material Sciences Corporation and Outokumpu Copper, Inc. Mr. Cesario holds an M.B.A. (Finance) from DePaul University and a B.S. (Accountancy) from the University of Illinois, as well as a CPA license from the state of Illinois.

**Mr. Nelson** joined the Company in April 2007 as Vice President of Sales. He was appointed Vice President of Sales and Marketing in August 2008. He is an executive who brings over 15 years of business development experience. Prior to joining Nanophase, Mr. Nelson started and managed the LCD business for Eastman Chemical Company. Prior to that, he was a consultant with Mercer Management Consulting working on corporate strategy development and implementation. Mr. Nelson has also started two consumer goods manufacturing companies and has served as National Sales Manager for Pelouze Scale Company. He holds a B.S. in Marketing from Miami University and a M.B.A. from the Kellogg Graduate School of Management at Northwestern University.

---

## **Table of Contents**

**Ms. Baldwin** has served as the Director of Human Resources and Information Technology since joining the Company in 2000. In September of 2008, she was appointed as the Company's Vice-President of Human Resources and Investor Relations. Prior to joining Nanophase, she served as Vice-President of iLink Global, and Chief Human Resources Officer at the Marketing Store, a global supplier to McDonald's Corporation. Previous experience includes 14 years at Arthur Andersen, LLP & Andersen Consulting, LLP in various positions. Ms. Baldwin has a B.S. in Education from Western Illinois University and post graduate studies at Northern Illinois University. She is currently an active member of the Will County Three Rivers Manufacturing Human Resources Association.

**Dr. Murray** joined the Company in 2001 as a senior scientist. He was promoted to Director of Research and Development in 2005 and appointed Vice President of Research and Development in 2008. He holds an undergraduate degree in Biochemistry from Illinois Benedictine College (Benedictine University) and a doctorate in Organic Chemistry from the University of Illinois at Urbana-Champaign. Dr. Murray has over 15 years of experience in the areas of polymer synthesis, particle dispersion, chemical process development and technical project management. Dr. Murray has been focused on dispersion product development and technical support for business development. Prior to joining Nanophase, Dr. Murray held various research and management positions at Nalco Chemical Company.

**Mr. Judd** joined the Company in 2000 as a senior process engineer. In December of 2009, he was appointed as the Company's Vice President of Operations. In his 9 years within the Company, he has served in progressively responsible engineering positions and has been instrumental in developing, building, and improving the Company's engineering and production capabilities. He has 20 years of experience in the area of chemical process scale-up, particle dispersion technology, and manufacturing support. Before joining Nanophase, Mr. Judd held various research and engineering positions at the Eastman Kodak Company, and prior to that, spent time as an intern at Michigan Biotechnology Institute while attending college. He graduated with Honors from Michigan State University with a B.S. in Chemical Engineering, and currently holds a professional engineering license.

The Board of Directors elects executive officers and such executive officers, subject to the terms of their employment agreements, serve at the discretion of the Board of Directors. Messrs. Jankowski, Cesario, Nelson and Judd, Ms. Baldwin, and Dr. Murray each have employment agreements with the Company. See Item 11 below. There are no family relationships among any of the directors or officers of the Company.

### **SECTION 16(A) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE**

Section 16 of the Securities Exchange Act of 1934, as amended (the Exchange Act), requires the Company's officers (as defined under Section 16), directors and persons who beneficially own greater than 10% of a registered class of the Company's equity securities to file reports of ownership and changes in ownership with the Securities and Exchange Commission. Based solely on a review of the forms it has received and on written representations from certain reporting persons that no such forms were required for them, the Company believes that during 2009, all Section 16 filing requirements applicable to its officers, directors and 10% beneficial owners were complied with by such persons.

### **CODE OF ETHICS**

The Company has adopted a Code of Business Conduct and Ethics (Code of Ethics) that applies to, among others, the Company's principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions. The Code of Ethics is posted on its Internet web site [www.nanophase.com](http://www.nanophase.com) under the Investor Relations section. In the event that the Company makes any amendment to, or grants any waiver from, a provision of the Code of Ethics that requires disclosure under applicable SEC rules, the Company intends to disclose such amendment or waiver on its web site.

**Table of Contents****Item 11. Executive Compensation****Compliance with Section 162(m)**

The Compensation Committee currently intends for all compensation paid to the executive officers to be tax deductible to the Company pursuant to Section 162(m) of the Internal Revenue Code of 1986, as amended ( Section 162(m) ). Section 162(m) provides that compensation paid to the executive officers in excess of \$1,000,000 cannot be deducted by the Company for Federal income tax purposes unless, in general, (1) such compensation is performance-based, established by a committee of outside directors and objective, and (2) the plan or agreement providing for such performance-based compensation has been approved in advance by stockholders. The Compensation Committee believes that the requirements of Section 162(m) are uncertain at this time and may arbitrarily impact the Company. In the future, the Compensation Committee may determine to adopt a compensation program that does not satisfy the conditions of Section 162(m) if in its judgment, after considering the additional costs of not satisfying Section 162(m), such program is appropriate.

**SUMMARY COMPENSATION TABLE**

The following table sets forth a summary of the compensation for each of our named executive officers in U.S. dollars for the financial year ended December 31, 2009.

Name and Principal Position	Year	Salary (\$)	Bonus \$(1)	Option Awards \$(2)	Non-Equity Incentive		Total (\$)
					Plan Compensation \$(3)	All Other Compensation \$(4)	
<b>Jess Jankowski</b> <b>President and Chief Executive Officer (formerly Chief Financial Officer) (5)</b>	2009	\$ 246,311	\$ 35,000	\$ 22,314	\$	\$ 18,218	\$ 321,843
	2008	\$ 196,000	\$ 125,000	\$ 51,702	\$	\$ 23,626	\$ 396,328
<b>Frank Cesario</b> <b>Chief Financial Officer (6)</b>	2009	\$ 50,192	\$ 5,000	\$ 15,606	\$	\$	\$ 70,798
<b>David Nelson</b> <b>Vice President Sales and Marketing</b>	2009	\$ 176,670	\$ 16,000	\$ 22,314	\$	\$ 17,073	\$ 232,057
<b>Nancy Baldwin</b> <b>Vice President Human Resources and Investor Relations</b>	2009	\$ 147,992	\$ 10,000	\$ 22,314	\$	\$ 7,633	\$ 187,939

- (1) These amounts were earned in 2009 and 2008, but paid in early 2009 and 2010, respectively. Sixty percent of the 2008 bonus to Mr. Jankowski was authorized at the special meeting of the Board of Directors held on August 13, 2008, when Mr. Jankowski was appointed acting CEO. This bonus was in recognition of additional responsibilities required of Mr. Jankowski and paid in quarterly increments.
- (2) The amounts in this column represent the dollar amount recognized for financial statement reporting purposes with respect to the 2009 and 2008 fiscal years in accordance with FASB ASC Topic 718 (formerly SFAS 123R). See Note 12 of the notes to our financial statements contained elsewhere in this Annual Report for a discussion of all assumptions made by us in determining the FASB ASC Topic 718 (formerly SFAS 123R) values.
- (3) None.
- (4) The amounts in this column represent 401(k) match, health and life insurance. Health insurance benefits are the same for all employees. Life insurance is provided in the amount of one times the annual base salary with a maximum of \$150,000.
- (5) Effective August 2008, Mr. Jankowski was appointed Acting Chief Executive Officer. Effective February 2009, Mr. Jankowski was appointed President and Chief Executive Officer.

---

**Table of Contents**

(6) Effective June 2009, Mr. Cesario joined Nanophase as our Chief Financial Officer.

***Employment Agreements***

Effective August 12, 2009, the Company entered into an employment agreement with Jess Jankowski in connection with his services as President and Chief Executive Officer of the Company.

Pursuant to the terms of his employment agreement, Mr. Jankowski will receive an annual base salary of not less than \$275,000. In addition, Mr. Jankowski will be eligible for discretionary bonuses for services to be performed as an executive officer of the Company based on performance and achieving milestones approved by the Board of Directors of the Company (the Board).

Mr. Jankowski will be eligible for such stock options and other equity compensation as the Board deems appropriate, subject to the provisions of the Company's 2004 Equity Compensation Plan (the Plan). Mr. Jankowski will also be entitled to the employee benefits made available by the Company generally to all other executive officers of the Company, subject to the terms and conditions of the Company's employee benefit plan in effect from time to time.

In the event Mr. Jankowski's employment is terminated other than for cause, as defined in the employment agreement, Mr. Jankowski will receive a sum equal to Mr. Jankowski's base salary in effect at the time of termination for 52 full weeks after the effective date of termination, payable in proportionate amounts on the Company's regular pay cycle for professional employees, provided that Mr. Jankowski signs, without subsequent revocation, a separation agreement and release in a form acceptable to the Company. In addition, all stock options granted to Mr. Jankowski prior to termination will become fully vested and exercisable in accordance with the applicable option grant agreement and the Plan. If he is terminated for cause, or if he resigns as an employee of the Company, Mr. Jankowski will not be entitled to any severance or other benefits accruing after the term of the employment agreement and such rights will be forfeited immediately upon the end of such term.

If, within two years after the occurrence of a change in control, as defined in his employment agreement, Mr. Jankowski's employment is terminated other than for cause, his responsibilities or annual compensation are materially reduced without his prior consent, or the Company ceases to be publicly held (each, a Trigger), then, subject to Mr. Jankowski signing, without subsequently revoking, a Separation Agreement and Release in a form acceptable to the Company, Mr. Jankowski will receive a sum equal to his base salary for 104 full weeks after the date the Trigger occurs. In addition, all stock options granted to Mr. Jankowski prior to the Trigger will become fully vested and exercisable in accordance with the applicable option grant agreement and the Plan.

Effective as of June 24, 2009, the Company entered into an employment agreement with Mr. Frank Cesario providing for an annual base salary of not less than \$150,000. The Company also granted to Mr. Cesario options to purchase up to 20,000 shares of Common Stock at an exercise price of \$1.07 per share with options for one-third of such shares becoming exercisable on each of the first three anniversaries of the dates of grant. No term has been assigned to Mr. Cesario's employment agreement. If Mr. Cesario is terminated other than for cause (as such term is defined in Mr. Cesario's employment agreement), Mr. Cesario will receive severance benefits in an amount equal to Mr. Cesario's base salary for 3 weeks.

Effective as of September 28, 2008, the Company entered into an employment agreement with Mr. Nelson which provided for an annual base salary of not less than \$185,000. No term has been assigned to Mr. Nelson's employment agreement. If Mr. Nelson is terminated other than for cause on or before September 22, 2010 (as such term is defined in Mr. Nelson's employment agreement), Mr. Nelson will receive severance benefits in an amount equal to Mr. Nelson's base salary for 52 weeks; if termination without cause occurs thereafter, the Company shall pay Mr. Nelson 39 weeks.



**Table of Contents**

Effective as of September 25, 2008 the Company entered into an employment agreement with Ms. Nancy Baldwin providing for an annual base salary of not less than \$150,000. No term has been assigned to Ms. Baldwin's employment agreement. If Ms. Baldwin is terminated other than for cause (as such term is defined in Ms. Baldwin's employment agreement), Ms. Baldwin will receive severance benefits in an amount equal to Ms. Baldwin's base salary for 26 weeks.

**OUTSTANDING EQUITY AWARDS AT FISCAL YEAR-END**

The following table sets forth information regarding each unexercised option held by each of our named executive officers as of December 31, 2009.

NAME	NUMBER OF SECURITIES UNDERLYING UNEXERCISED EARNED OPTIONS (#) EXERCISABLE	OPTION AWARDS			STOCK AWARDS	
		EQUITY INCENTIVE PLAN AWARDS: NUMBER OF SECURITIES UNDERLYING UNEXERCISED UNEXERCISABLE (#)	OPTION EXERCISE PRICE (\$)	OPTION EXPIRATION DATE	EQUITY INCENTIVE PLAN AWARDS: NUMBER OF SHARES OF STOCK THAT HAVE NOT VESTED (#)	EQUITY INCENTIVE PLAN AWARDS: MARKET VALUE OF SHARES OF STOCK THAT HAVE NOT VESTED (\$)
Jess Jankowski	21,775	-0-	\$ 7.687	05/24/10		
	13,000	-0-	\$ 10.875	01/26/11		
	13,000	-0-	\$ 7.062	02/28/11		
	20,000	-0-	\$ 6.650	01/03/12		
	18,000	-0-	\$ 3.660	03/24/13		
	11,000	-0-	\$ 5.550	10/11/14		
	10,000	-0-	\$ 6.030	09/27/15		
	15,000	-0-	\$ 6.010	09/27/16		
	12,000	6,000	\$ 4.480	11/06/17		
	7,666	15,334	\$ 3.140	05/12/18		
	-0-	30,000	\$ 1.020	05/04/19		
Frank Cesario	-0-	20,000	\$ 1.070	06/24/19		
David Nelson	14,000	21,000	\$ 6.130	04/09/17		
	10,000	5,000	\$ 4.480	11/06/17		
	6,666	13,334	\$ 3.140	05/12/18		
	-0-	30,000	\$ 1.020	05/04/19		
Nancy Baldwin	10,000	-0-	\$ 11.625	11/20/10		
	6,000	-0-	\$ 6.650	01/03/12		
	3,000	-0-	\$ 5.550	10/11/14		
	7,500	-0-	\$ 6.010	09/27/16		
	6,000	3,000	\$ 4.480	11/06/17		
	5,000	10,000	\$ 3.140	05/12/18		
	-0-	30,000	\$ 1.020	05/04/19		

**POTENTIAL PAYMENT UPON TERMINATION OR CHANGE IN CONTROL**

**Severance Protection.** Please see discussion of severance benefits under Item 11 - Employment Agreements above.

**Table of Contents**

**Change in Control.** Upon a change in control, the 2001 Equity Compensation Plan (the predecessor to the 2004 Equity Compensation Plan) and the 2004 Equity Compensation Plan provide that: (1) vesting under all outstanding stock options will automatically accelerate and each option will become fully exercisable; (2) the restrictions and conditions on all outstanding restricted shares shall immediately lapse; and (3) the holders of performance shares will receive a payment in settlement of the performance shares, in an amount determined by the Compensation Committee, based on the target payment for the performance period and the portion of the performance period that precedes the change in control. If the Company is not the surviving entity, the successor is required to assume all unexercised options. Under the Company's 1992 Stock Option Plan, the vesting of options issued under it is accelerated upon a sale or merger (as defined in the 1992 Stock Option Plan).

The following table quantifies the estimated payments that would be made in each covered circumstance:

NAME	TERMINATION BY COMPANY	CHANGE IN	INVOLUNTARY
	WITHOUT CAUSE (1)	CONTROL (2)	TERMINATION IN CONNECTION WITH OR FOLLOWING A CHANGE IN CONTROL (3)
Jess Jankowski	\$ 275,000	\$ -0-	\$ 550,000
Frank Cesario	\$ 9,000	\$ -0-	\$ 9,000
David Nelson	\$ 185,000	\$ -0-	\$ 185,000
Patrick Murray	\$ 75,000	\$ -0-	\$ 75,000
Nancy Baldwin	\$ 75,000	\$ -0-	\$ 75,000
H. Glenn Judd	\$ 74,000	\$ -0-	\$ 74,000

- (1) This amount represents the severance benefits that would be received under the executive officers employment agreement as described had the executive officer been terminated by the Company without cause on December 31, 2009.
- (2) This amount represents an estimate of the value that would have been received under the equity incentive plans had a change in control occurred as of December 31, 2009 and the executive officers benefited from an acceleration of vesting in the equity-based plan awards as described above. For this purpose, the share price as of December 31, 2009 was used. The amount represents the difference between the exercise price of any unvested options and \$0.87.
- (3) This amount represents an estimate of the payments and value that would have been received by the executive officers had the executive officers been terminated by the Company without cause on December 31, 2009 in connection with a change in control on this date. It is the sum of the first two columns.

**DIRECTOR COMPENSATION**

Upon first being elected to the Board of Directors, each director of the Company who is not an employee or consultant of the Company (an Outside Director) is granted stock options to purchase 10,000 shares of common stock at the closing price as of the date of issuance (the fair market value). This initial option grant to an Outside Director vests over five years.

In 2009, the Company paid \$5,500 as quarterly compensation to the Chairman of the Board of Directors totaling \$22,000. The Company paid \$4,500 as quarterly compensation to the Chairman of the Finance and Audit committee totaling \$18,000. The Company paid \$4,000 in the first quarter and \$4,500 in the second, third and fourth quarters to the Vice Chairman of the Board of Directors totaling \$17,500, compared to all other directors being paid \$4,000 each, which will amount to an annual total of \$16,000 per outside director for services performed in their capacity as directors.

In addition, the Chairman of the Board of Directors received \$2,090 in the first quarter of 2009 in deferred common stock (the Director Restricted Stock Plan as described below) based on the closing price on February 10, 2009. The Vice Chairman of the Board of Directors and the Chairman of the Finance and Audit committee received \$1,710 respectively, compared to \$1,520 to all other directors.

**Table of Contents**

During the second, third and fourth quarters of 2009, the Company granted its outside directors stock appreciation rights (SARs) totaling 45,750 shares, under the Company's Amended and Restated 2006 Stock Appreciation Rights Plan. The fair value of the awards granted was \$14,550 and is included in director compensation expense for the year ended December 31, 2009. The SARs granted vested immediately and are payable upon the directors' termination from the position of director.

In 2005, the Company adopted, and the Shareholders approved, the 2005 Non-Employee Director Restricted Stock Plan (the Director Restricted Stock Plan) which reserves 150,000 shares of the Company's common stock to be issued to Outside Directors in the form of restricted shares. In 2005, no awards were made under the Director Restricted Stock Plan. In 2005, the Company also adopted the Non-Employee Director Deferred Compensation Plan (the Director Deferred Compensation Plan) which permits an Outside Director to defer the receipt of director fees until separation from service or the Company undergoes a change in control. The Company amended the Director Restricted Stock Plan in 2005 to permit an Outside Director to defer receipt of restricted stock granted under it. The deferred restricted shares are accounted for under the Director Deferred Compensation Plan and issued upon separation from service or the Company's change in control. Under the Director Deferred Compensation Plan, the deferred fees that would have been paid in cash are deemed invested in 5 year U.S. Treasury Bonds during the deferral period. The accumulated hypothetical earnings are paid following the Outside Director's separation from service or the Company's change in control. The deferred fees that would have been paid as restricted shares are deemed invested in common stock of the Company during the deferral period. The Director Deferred Compensation Plan is an unfunded, nonqualified deferred compensation arrangement. In 2008 and 2009, all Outside Directors elected to defer receipts of all of the restricted shares they became entitled to under the Director Restricted Stock Plan. In 2008 and 2009, no Outside Directors elected to defer receipt of cash under the Director Deferred Compensation Plan.

All Outside Directors are reimbursed for their reasonable out-of-pocket expenses incurred in attending board and committee meetings.

**2009 Outside Director Compensation**

Name	Fees Earned or	Stock Awards(\$)	Stock	Total(\$)
	Paid in Cash(\$)		Appreciation Rights(\$)	
James A. Henderson	\$ 16,000	\$ 1,520	\$ 1,908	\$ 19,428
James A. McClung	\$ 18,000	\$ 1,710	\$ 2,147	\$ 21,857
Jerry K. Pearlman	\$ 16,000	\$ 1,520	\$ 1,908	\$ 19,428
Donald S. Perkins	\$ 22,000	\$ 2,090	\$ 2,624	\$ 26,714
Richard W. Siegel, Ph.D.	\$ 16,000	\$ 1,520	\$ 1,908	\$ 19,428
R. Janet Whitmore	\$ 16,000	\$ 1,520	\$ 1,908	\$ 19,428
George A. Vincent, III	\$ 17,500	\$ 1,710	\$ 2,147	\$ 21,357

**Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters**  
**SECURITY OWNERSHIP OF MANAGEMENT**

**AND PRINCIPAL STOCKHOLDERS**

The following table sets forth, as of March 14, 2010 certain information with respect to the beneficial ownership of the common stock by (1) each person known by the Company to own beneficially more than 5% of the outstanding shares of common stock, (2) each Company director, (3) each of the Company's named executive officers and (4) all Company executive officers and directors as a group.

**Table of Contents**

Name	Number of Shares Beneficially Owned (1)	Percent of Shares Beneficially Owned
Bradford T. Whitmore	5,188,307(2)	24.47%
Spurgeon Corporation	4,763,920(3)	22.47%
Grace Brothers, Ltd.	4,463,920(4)	21.05%
Altana Chemie, AG	1,256,281(5)	5.92%
James A. Henderson	22,410(6)	*
Richard W. Siegel, Ph.D.	223,350(7)	1.05%
James McClung	41,771(8)	*
Jerry Pearlman	39,948(9)	*
Donald S. Perkins	69,811(10)	*
R. Janet Whitmore	184,291(11)	*
George A. Vincent, III	6,667(12)	*
Jess Jankowski	172,524(13)	*
David Nelson	56,333(14)	*
Patrick Murray, Ph.D.	44,066(15)	*
Nancy Baldwin	52,500(16)	*
All executive officers and directors as a group (13 persons)	963,504(17)	4.51%

Unless otherwise indicated below, the persons address is the same as the address for the Company.

\* Denotes beneficial ownership of less than one percent.

- (1) Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission (the Commission). Unless otherwise indicated below, the persons in the above table have sole voting and investment power with respect to all shares of common stock shown as beneficially owned by them.
- (2) Includes 4,463,920 shares of common stock held by Grace Brothers, Ltd., 300,000 shares of common stock held by Grace Investments, Ltd. and 424,387 shares held by Bradford T. Whitmore. Mr. Whitmore is a general partner of both Grace entities. In such capacities, Mr. Whitmore shares voting and investment power with respect to the shares of common stock held by the Grace entities. This information is based on information reported on Form 4 filed on December 24, 2009 with the Commission by Mr. Whitmore. The address of the stockholder is 1560 Sherman Avenue, Suite 900, Evanston, Illinois 60201.
- (3) Includes 4,463,920 shares of common stock held by Grace Brothers, Ltd. and 300,000 shares of common stock held by Grace Investments, Ltd. Spurgeon Corporation is a general partner of both Grace entities and shares voting and investment power with respect to the shares of common stock held by such Grace entities. This information is based on information reported on Form 4 filed on December 24, 2009 with the Commission by Spurgeon Corporation. The address of the stockholder is 1560 Sherman Avenue, Suite 900, Evanston, Illinois 60201.
- (4) This information is based on information reported on Form 4 filed on December 24, 2009 with the Commission by Spurgeon Corporation and Bradford T. Whitmore. The address of the stockholder is 1560 Sherman Avenue, Suite 900, Evanston, Illinois 60201.
- (5) In accordance with the terms of the private placement of 1,256,281 shares of common stock to Altana Chemie AG, the Company filed a registration statement for the shares on February 5, 2007 which was declared effective by the SEC on May 18, 2007.
- (6) Includes Mr. Henderson's 14,000 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.

**Table of Contents**

- (7) Includes Dr. Siegel s 6,000 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (8) Includes Mr. McClung s 18,000 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (9) Includes Mr. Pearlman s 8,000 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (10) Includes Mr. Perkin s 21,000 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (11) Includes Ms. Whitmore s 10,000 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (12) Includes Mr. Vincent s 6,667 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (13) Includes Mr. Jankowski s 159,108 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (14) Includes Mr. Nelson s 54,333 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (15) Includes Dr. Murray s 44,066 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (16) Includes Ms. Baldwin s 52,500 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.
- (17) Includes all executive officers and directors as a group s 963,504 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 15, 2010.

**Item 13. Certain Relationships and Related Transactions, and Director Independence**

Since the beginning of the Company s last fiscal year, the Company has not engaged in any transaction in which a related person had or will have a direct or indirect material interest.

**Director Independence.** The Board of Directors has determined that the following directors are independent as that term is defined in (i) paragraph (m) of Section 10A of the Securities Exchange Act of 1934 (15 U.S.C. 78f), and the rules and regulations of the Securities and Exchange Commission promulgated thereunder, and (ii) the rules of the NASDAQ stock market: Mr. McClung, Mr. Henderson, Mr. Pearlman, Mr. Perkins, Mr. Siegel and Mr. Vincent.

The Board of Directors has established an Audit and Finance Committee, Compensation and Governance Committee and a Nominating Committee each comprised entirely of independent directors. The members of the Audit and Finance Committee are Mr. McClung (Chairman), Mr. Pearlman, Mr. Perkins and Mr. Vincent. The members of the Compensation and Governance Committee are Mr. Pearlman (Chairman), Mr. Henderson, Mr. Perkins and Mr. Vincent. The members of the Nominating Committee are Mr. Henderson (Chairman), Mr. McClung, Mr. Pearlman, Mr. Perkins, Dr. Siegel and Mr. Vincent.

## **Table of Contents**

### **Item 14. Principal Accountant Fees and Services**

**Audit Fees.** The aggregate amount billed by our principal accountant, McGladrey & Pullen, LLP, for audit services performed for the fiscal years ended December 31, 2009 and 2008 was \$163,000 and \$164,000, respectively. Audit services include the auditing of financial statements and quarterly reviews.

**Audit Related Fees.** Total fees billed by McGladrey & Pullen, LLP were \$16,000 and \$14,000 for the years ended December 31, 2009 and 2008, which included costs incurred for reviews of registration statements, assistance with Staff comment letters, and consultation on various accounting matters in support of the Company's financial statements.

**Tax Fees.** Total fees billed by RSM McGladrey, Inc. (an affiliate of McGladrey & Pullen, LLP) for tax related services for the fiscal years ended December 31, 2009 and 2008 were \$7,000 and \$9,000, respectively. These services include the preparation of federal and state income tax returns and other tax matters.

**All Other Fees.** Other than those fees described above, during the fiscal year ended December 31, 2009 and 2008 there were no other fees billed for services performed by McGladrey & Pullen, LLP or RSM McGladrey, Inc.

All of the fees described above were approved by Nanophase's Audit Committee.

**Audit Committee Pre-Approval Policies and Procedures.** Nanophase's audit committee pre-approves the audit and non-audit services performed by McGladrey & Pullen, LLP, our principal accountants, and RSM McGladrey, Inc. (an affiliate of McGladrey & Pullen, LLP) in order to assure that the provision of such services does not impair McGladrey & Pullen, LLP's independence. Unless a type of service to be provided by McGladrey & Pullen, LLP and RSM McGladrey, Inc. (an affiliate of McGladrey & Pullen, LLP) has received general pre-approval, it will require specific pre-approval by the Audit Committee. In addition, any proposed services exceeding pre-approval cost levels will require specific pre-approval by the Audit Committee.

The term of any pre-approval is 12 months from the date of pre-approval, unless the audit committee specifically provides for a different period. The Audit Committee will periodically revise the list of pre-approved services, based on subsequent determinations, and has delegated pre-approval authority to the Chairman of the audit committee. In the event the Chairman exercises such delegated authority, he shall report such pre-approval decisions to the audit committee at its next scheduled meeting. The Audit Committee does not delegate its responsibilities to pre-approve services performed by the independent auditor to management.

## **PART IV**

### **Item 15. Exhibits, Financial Statement Schedules and Reports on Form 8-K**

(a) The following documents are filed as part of this Form 10-K:

1. The following financial statements of the Company, with the report of independent registered public accounting firm, are filed as part of this Form 10-K:

Report of McGladrey & Pullen, LLP, Independent Registered Public Accounting Firm

Balance Sheets as of December 31, 2009 and 2008

Statements of Operations for the Years Ended December 31, 2009 and 2008

Statements of Stockholders' Equity for the Years Ended December 31, 2009 and 2008

Statements of Cash Flows for the Years Ended December 31, 2009 and 2008

Notes to Financial Statements

2. The following exhibits are filed with this Form 10-K or incorporated by reference as set forth below.

**Table of Contents**

**Exhibit**

**Number**

- 2 Plan and Agreement of Merger dated as of November 25, 1997 by and between the Company and its Illinois predecessor, incorporated by reference to Exhibit 2 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997 (the 1997 10-K ).
- 3(i).1 Certificate of Incorporation of the Company, incorporated by reference to Exhibit 3.1 to the 1997 10-K.
- 3(i).2 First Amendment to the Certificate of Incorporation of Nanophase Technologies Corporation dated July 27, 2006, incorporated by reference to Exhibit 99.3 to the Company's Current Report on Form 8-K filed July 27, 2006.
- 3(ii).1 Bylaws of the Company, incorporated by reference to Exhibit 3.2 to the 1997 10-K.
- 4.1 Specimen stock certificate representing common stock, incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1 (File No. 333-36937) (the IPO S-1 ).
- 4.2 Form of Warrants, incorporated by reference to Exhibit 4.2 to the IPO S-1.
- 4.3 Rights Agreement dated as of October 28, 1998 by and between the Company and LaSalle National Bank, incorporated by reference to Exhibit 1 to the Company's Registration Statement on Form 8-A, filed October 28, 1998.
- 4.4 Certificate of Designation of Series A Junior Participating Preferred Stock incorporated by reference to Exhibit 4.4 to the Company's Annual Report on Form 10-K for the year ended December 31, 1998 (the 1998 10-K ).
- 4.5 Amendment to Rights Agreement dated August 1, 2001 between the Company and LaSalle National Association, as Rights Agent, incorporated by reference to Exhibit 4.5 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001.
- 4.6 2001 Nanophase Technologies Corporation Equity Compensation Plan, incorporated by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-8 (File No. 333-74170).
- 4.7 Second Amendment to Rights Agreement dated May 24, 2002 between the Company and LaSalle National Association, as Rights Agent, incorporated by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-3 (File No. 333-90326) filed June 12, 2003.
- 4.8 Third Amendment to Rights Agreement dated September 5, 2003 between the Company and LaSalle National Association, as Rights Agent, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed September 10, 2003.
- 4.9 Subscription Agreement dated September 8, 2003 between the Company and Grace Brothers, Ltd., incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed September 10, 2003.



**Table of Contents**

- 4.10 Stock Purchase Agreement dated March 23, 2004 between the Company and Altana Chemie AG, incorporated by reference to Exhibit 4.10 to the Company's Annual Report on Form 10-K filed March 30, 2004.
- 4.11 Registration Rights Agreement dated March 23, 2004 between the Company and Altana Chemie AG, incorporated by reference to Exhibit 4.11 to the Company's Annual Report on Form 10-K filed March 30, 2004.
- 4.12 2004 Nanophase Technologies Corporation 2004 Equity Compensation Plan, ( 2004 Equity Plan ) incorporated by reference to Exhibit 4 to the Company's Registration Statement on Form S-8 (File No. 333-119466).
- 4.13 Form of Stock Option Agreement under the 2004 Equity Plan, incorporated by reference to Exhibit 4.13 to the Company's Annual Report on Form 10-K filed March 15, 2005.
- 4.14 Form of Restricted Share Grant Agreement under the 2004 Equity Plan, incorporated by reference to Exhibit 4.14 to the Company's Annual Report on Form 10-K filed March 15, 2005.
- 4.15 Form of Performance Share Grant Agreement under the 2004 Equity Plan, incorporated by reference to Exhibit 4.15 to the Company's Annual Report on Form 10-K filed March 15, 2005.
- 4.16 2005 Nanophase Technologies Corporation Equity Compensation Plan, incorporated by reference to Exhibit 4 to the Company's Non-Employee Director Restricted Stock Plan, incorporated by reference to Exhibit A to the Company's Definitive Proxy Statement on Form DEF14A filed May 17, 2005.
- 4.17 First Amendment to the Nanophase Technologies Corporation 2005 Non-Employee Director Restricted Stock Plan, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed January 9, 2006.
- 4.18 Fourth Amendment to Shareholders' Rights Agreement, dated as of October 24, 2008, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed November 3, 2008.
- 4.19 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.
- 4.20 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.
- 10.1 The Nanophase Technologies Corporation Amended and Restated 1992 Stock Option Plan, as amended (the Stock Option Plan ), incorporated by reference to Exhibit 10.1 to the IPO S-1.
- 10.2 Form of Indemnification Agreement between the Company and each of its directors and executive officers, incorporated by reference to Exhibit 10.2 to the IPO S-1.
- 10.3 Amended and Restated Registration Rights Agreements dated as of March 16, 1994, as amended, incorporated by reference to Exhibit 10.2 to the IPO S-1.
- 10.4 License Agreement dated June 1, 1990 between the Company and ARCH Development Corporation, as amended, incorporated by reference to Exhibit 10.7 to the IPO S-1.

**Table of Contents**

10.5	License Agreement dated October 12, 1994 between the Company and Hitachi, incorporated by reference to Exhibit 10.8 to the IPO S-1.
10.6	License Agreement dated May 31, 1996 between the Company and Research Development Corporation of Japan, incorporated by reference to Exhibit 10.9 to the IPO S-1.
10.7	License Agreement dated April 1, 1996 between the Company and Cornell Research Foundation, incorporated by reference to Exhibit 10.10 to the IPO S-1.
10.8*	Consulting and Stock Purchase Agreement between Richard W. Siegel and the Company dated as of May 9, 1990, as amended February 13, 1991, November 21, 1991 and January 1, 1992, incorporated by reference to Exhibit 10.11 to the IPO S-1.
10.9	Lease Agreement between the Village of Burr Ridge and the Company, dated September 15, 1994, incorporated by reference to Exhibit 10.12 to the IPO S-1.
10.10	Distribution Agreement between the Company and C.I. Kasei, Ltd., (a subsidiary of Itochu Corporation) dated as of October 30, 1996, incorporated by reference to Exhibit 10.15 to the IPO S-1.
10.11	Supply Agreement between the Company and Schering-Plough HealthCare Products, Inc. dated as of March 15, 1997, incorporated by reference to Exhibit 10.17 to the IPO S-1.
10.12	License Agreement between the Company and C.I. Kasei Co., Ltd. (a subsidiary of Itochu Corporation) dated as of December 30, 1997, incorporated by reference to Exhibit 10.17 to the 1997 10-K.
10.13*	Form of Options Agreement under the Stock Option Plan, incorporated by reference to Exhibit 4.5 to the Company's Registration Statement on Form S-8 (File No. 333-53445).
10.14**	Zinc Oxide Supply Agreement dated as of September 16, 1999 between the Company and BASF Corporation, as assignee, incorporated by reference to Exhibit 10.22 to the 1999 10-K.
10.15	Lease Agreement between Centerpointe Properties Trust and the Company, dated June 15, 2000, incorporated by reference to Exhibit 10.23 to the 2000 10-K.
10.16**	Amendment No. 1 to Zinc Oxide Supply Agreement dated as of January, 2001 between the Company and BASF Corporation, incorporated by reference to Exhibit 10.24 to the 2000 10-K.
10.17	Promissory Note dated as of September 14, 2000 between the Company and BASF Corporation, incorporated by reference to Exhibit 10.25 to the 2000 10-K.
10.18**	Cooperation Agreement dated June 24, 2002 between the Company and Rodel, Inc., incorporated by reference to Exhibit 10.23 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2002.
10.19	First Amendment to Promissory Note dated as of March 11, 2003 between the Company and BASF Corporation, incorporated by reference to Exhibit 10.25 to the Company's Annual Report on Form 10-K for the year ended December 31, 2002.
10.20	Amendment No. 2. to Zinc Oxide Supply Agreement dated as of March 17, 2003 between the Company and BASF Corporation, incorporated by reference to Exhibit 10.25 to the Company's Annual Report on Form 10-K for the year ended December 31, 2002.

**Table of Contents**

- 10.21\*\* Amendment No. 1 to Cooperation Agreement dated February 25, 2004 between the Company and Rohm and Haas Electronic Materials CMP Inc. (formerly known as Rodel, Inc.), incorporated by reference to Exhibit 10.28 to the Company's Annual Report on Form 10-K filed March 30, 2004.
- 10.22 Joint Development Agreement dated March 23, 2004 between the Company and Altana Chemie AG., incorporated by reference to Exhibit 10.29 to the Company's Quarterly Report on Form 10-Q filed August 13, 2004
- 10.23 Amendment No. 1 to License Agreement dated July 16, 2004 between the Company and C.I. Kasei Co., Ltd., incorporated by reference to Exhibit 10.30 to the Company's Quarterly Report on Form 10-Q filed August 13, 2004.
- 10.24\*\* Letter Agreement Amending Cooperation Agreement dated October 15, 2004 between the Company and Rohm and Haas Electronic Materials CMP Inc., incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed October 22, 2004.
- 10.25 Building Lease dated September 15, 2004 between the Company and the Village of Burr Ridge, incorporated by reference to Exhibit 10.32 to the Company's Annual Report on Form 10-K filed March 15, 2005.
- 10.26\*\* Second Amendment to Promissory Note dated as of May 1, 2005 between the Company and BASF Corporation, incorporated by reference to Exhibit 10.33 to the Company's Quarterly Report on Form 10-Q filed May 9, 2005.
- 10.27 Lease Amendment effective October 1, 2005 between Nanophase Technologies Corporation and Centerpoint Properties Trust, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed October 20, 2005.
- 10.28\*\* Distributor Agreement dated October 24, 2005 between Johnson Matthey Catalog Company, Inc., d/b/a ALFA AESAR, and Nanophase Technologies Corporation, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed November 1, 2005.
- 10.29 First Amendment to 2005 Non-Employee Director Restricted Stock Plan, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed January 9, 2006.
- 10.30 Nanophase Technologies Corporation Non-Employee Director Deferred Compensation Plan, incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed January 9, 2006.
- 10.31\*\* Supply Agreement dated March 3, 2006 between Roche Diagnostics GmbH and Nanophase Technologies Corporation, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed March 9, 2006.
- 10.32 Z-COTE HP-2 Brand Supply Agreement dated May 15, 2006 between BASF Corporation and Nanophase Technologies Corporation, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed June 20, 2006.
- 10.33 Amendment to 2004 Equity Compensation Plan, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed July 27, 2006.
- 10.34 Stock Purchase Agreement dated August 25, 2006 between Rohm and Haas Electronic Materials CMP Holdings, Inc. and Nanophase Technologies Corporation, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed August 28, 2006.

**Table of Contents**

10.35	Registration Rights Agreement dated August 25, 2006 between Rohm and Haas Electronic Materials CMP Holdings, Inc. and Nanophase Technologies Corporation, incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed August 28, 2006.
10.36**	Amended and Restated Cooperation Agreement dated August 25, 2006 between Rohm and Haas Electronic Materials CMP Inc. and Nanophase Technologies Corporation, incorporated by reference to Exhibit 99.3 to the Company's Current Report on Form 8-K filed August 28, 2006.
10.37	2006 Stock Appreciation Rights Plan, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed October 3, 2006.
10.38	Form of Grant Agreement, incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed October 3, 2006.
10.39	Placement Agency Agreement dated as of June 29, 2007 between the Company and Global Crown Capital, L.L.C., incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed June 2, 2007.
10.40**	Agreement dated July 7, 2008 between the Company and Altana Chemie GmbH, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed July 18, 2008.
10.41	2008 Long-Term Cash Incentive Plan, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed July 25, 2008.
10.42*	Separation Agreement effective August 25, 2008, between the Company and Joseph E. Cross, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed August 29, 2008.
10.43*	Separation Agreement effective September 12, 2008, between the Company and Kevin J. Wenta, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed September 15, 2008.
10.44*	Employment Agreement effective as of September 25, 2008, between the Company and Nancy Baldwin, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed October 2, 2008.
10.45*	Employment Agreement effective as of September 25, 2008, between the Company and Patrick Murray, incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed October 2, 2008.
10.46*	Employment Agreement effective as of September 25, 2008, between the Company and David W. Nelson, incorporated by reference to Exhibit 99.3 to the Company's Current Report on Form 8-K filed October 2, 2008.
10.47	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/A filed March 27, 2009.
10.48	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.

**Table of Contents**

10.49*	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.
10.50	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.
10.51*	Nanophase Technologies Corporation's Amended and Restated 2006 Stock Appreciation Rights Plan, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed April 9, 2009.
10.52*	Employment Agreement dated June 24, 2009 between the Company and Frank Cesario, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed June 26, 2009.
10.53*	Employment Agreement effective August 12, 2009 between the Company and Jess Jankowski, incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed August 12, 2009.
10.54*	Employment Agreement dated December 14, 2009 between the Company and Glenn Judd, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed December 18, 2009.
23.1	Consent of McGladrey & Pullen, LLP.
23.2	Consent of Houlihan Smith & Company Inc., dated February 24, 2010
31.1	Certification of the Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act.
31.2	Certification of the Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act.
32	Certification of the Chief Executive Officer and the Chief Financial Officer pursuant to 18 U.S.C. Section 1350

\* Management contract or compensatory plan or arrangement.

\*\* Confidentiality previously granted for portions of this agreement.

**Table of Contents**

**NANOPHASE TECHNOLOGIES CORPORATION**

**INDEX TO FINANCIAL STATEMENTS**

	<b>Page</b>
<u>Report of McGladrey and Pullen, LLP, Independent Registered Public Accounting Firm</u>	F-2
<u>Balance Sheets as of December 31, 2009 and 2008</u>	F-3
<u>Statements of Operations for the years ended December 31, 2009 and 2008</u>	F-4
<u>Statements of Stockholders' Equity for the years ended December 31, 2009 and 2008</u>	F-5
<u>Statements of Cash Flows for the years ended December 31, 2009 and 2008</u>	F-6
<u>Notes to the Financial Statements</u>	F-7

F-1

**Table of Contents**

**Report of Independent Registered Public Accounting Firm**

To the Board of Directors and Stockholders

Nanophase Technologies Corporation

We have audited the balance sheets of Nanophase Technologies Corporation as of December 31, 2009 and 2008, and the related statements of operations, stockholders' equity and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Nanophase Technologies Corporation as of December 31, 2009 and 2008, and the results of its operations and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

We were not engaged to examine management's assessment of the effectiveness of Nanophase Technologies Corporation's internal control over financial reporting as of December 31, 2009, included in the accompanying Item 9A(T) Controls and Procedures and, accordingly, we do not express an opinion thereon.

/s/ McGladrey & Pullen, LLP

Schaumburg, Illinois  
March 30, 2010

F-2

**Table of Contents****NANOPHASE TECHNOLOGIES CORPORATION****BALANCE SHEETS**

	As of December 31,	
	2009	2008
<b>ASSETS</b>		
<b>Current assets:</b>		
Cash and cash equivalents	\$ 3,899,393	\$ 723,069
Investments	3,594,604	6,908,888
Trade accounts receivable, less allowance for doubtful accounts of \$9,000 December 31, 2009 and 2008	858,706	1,092,125
Other receivables	477,989	7,749
Inventories, net	884,326	1,154,207
Prepaid expenses and other current assets	294,738	482,452
<b>Total current assets</b>	<b>10,009,756</b>	<b>10,368,490</b>
Investments		5,340,000
Equipment and leasehold improvements, net	5,557,832	6,651,842
Other assets, net	37,283	39,765
	<b>\$ 15,604,871</b>	<b>\$ 22,400,097</b>
<b>LIABILITIES AND STOCKHOLDERS EQUITY</b>		
<b>Current liabilities:</b>		
Current portion of capital lease obligations	\$ 8,470	22,211
Current portion of deferred other revenue		74,243
Accounts payable	202,975	356,853
Accrued expenses	509,206	772,167
Accrued severance	38,060	541,014
<b>Total current liabilities</b>	<b>758,711</b>	<b>1,766,488</b>
Long-term debt, less current maturities and unamortized debt discount		1,570,346
Long-term portion of capital lease obligations	748	9,219
Long-term deferred rent	617,642	592,562
Asset retirement obligations	134,763	128,533
<b>Total long-term liabilities</b>	<b>753,153</b>	<b>2,300,660</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, 30,000,000 shares authorized; 21,204,162 and 21,188,912 shares issued and outstanding on December 31, 2009 and 2008, respectively	212,042	211,889
Additional paid-in capital	92,246,777	91,597,529
Accumulated deficit	(78,365,812)	(73,476,469)
<b>Total stockholders equity</b>	<b>14,093,007</b>	<b>18,332,949</b>
	<b>\$ 15,604,871</b>	<b>\$ 22,400,097</b>

(See accompanying Notes to Financial Statements)





**Table of Contents****NANOPHASE TECHNOLOGIES CORPORATION****STATEMENTS OF OPERATIONS**

	<b>Years ended December 31,</b>	
	<b>2009</b>	<b>2008</b>
<b>Revenue:</b>		
Product revenue	\$ 5,937,100	\$ 9,744,759
Other revenue	383,226	469,058
Total revenue	6,320,326	10,213,817
<b>Operating expense:</b>		
Cost of revenue	5,368,719	7,501,468
Gross profit	951,607	2,712,349
Research and development expense	1,615,894	1,764,284
Selling, general and administrative expense	3,852,737	5,390,771
Severance charges	794,069	1,578,859
Loss from operations	(5,311,093)	(6,021,565)
Interest income	89,615	383,083
Interest expense	(35,813)	(130,992)
Unrealized losses on investments		(660,000)
Auction rate securities settlement	440,000	
Realized loss on investment	(60,000)	
Other, net	(12,052)	(8,373)
Loss before provision for income taxes	(4,889,343)	(6,437,847)
Provision for income taxes		
Net loss	\$ (4,889,343)	\$ (6,437,847)
Net loss net per share-basic and diluted	(0.23)	(0.30)
Weighted average number of basic and diluted common shares outstanding	21,202,492	21,144,336

(See accompanying Notes to Financial Statements)

**Table of Contents****NANOPHASE TECHNOLOGIES CORPORATION****STATEMENTS OF STOCKHOLDERS EQUITY**

Description	Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total
	Shares	Amount	Shares	Amount			
Balance on December 31, 2007		\$	21,088,068	\$ 210,881	\$ 90,201,131	\$ (67,038,622)	\$ 23,373,390
Exercise of stock options			16,667	166	30,251		30,417
Common stock issuances			84,177	842	179,158		180,000
Stock-based compensation					1,186,989		1,186,989
Net loss for the year ended December 31, 2008						(6,437,847)	(6,437,847)
Balance on December 31, 2008		\$	21,188,912	\$ 211,889	\$ 91,597,529	\$ (73,476,469)	\$ 18,332,949
Stock-based compensation					637,811		637,811
Common stock issuances			15,250	153	11,437		11,590
Net loss for the year ended December 31, 2009						(4,889,343)	(4,889,343)
Balance on December 31, 2009		\$	21,204,162	\$ 212,042	\$ 92,246,777	\$ (78,365,812)	\$ 14,093,007

(See accompanying Notes to Financial Statements)

**Table of Contents****NANOPHASE TECHNOLOGIES CORPORATION****STATEMENTS OF CASH FLOWS**

	<b>Years ended December 31,</b>	
	<b>2009</b>	<b>2008</b>
<b>Operating activities:</b>		
Net loss	\$ (4,889,343)	\$ (6,437,847)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation and amortization	1,247,866	1,287,987
Amortization of debt discount	27,076	57,840
Amortization of deferred revenue	(74,243)	(127,273)
Share-based compensation	453,257	774,204
Charges for accelerated vesting of stock options	210,694	592,785
Allowance for excess inventory quantities	14,791	
Loss on disposal of equipment	13,451	11,792
Realized loss on auction rate securities	60,000	
Unrealized losses on auction rate securities		660,000
Settlement of auction rate securities	(440,000)	
Abandonment of trademarks		37,211
Changes in assets and liabilities related to operations:		
Trade accounts receivable	233,419	311,081
Other receivables	(30,240)	(7,749)
Inventories	255,090	(68,843)
Prepaid expenses and other assets	187,714	(183,988)
Accounts payable	(129,125)	88,250
Accrued expenses	(755,386)	443,767
Net cash used in operating activities	(3,614,979)	(2,560,783)
<b>Investing activities:</b>		
Acquisition of equipment and leasehold improvements	(171,721)	(499,967)
Proceeds from disposal of equipment	24,000	1,800
Payment of accounts payable incurred for the purchase of equipment and leasehold improvements	(35,626)	(5,318)
Proceeds from sale of auction rate securities	1,720,000	
Purchases of investments	(124,171,970)	(232,213,181)
Sales of investments	131,046,254	235,450,137
Net cash provided by investing activities	8,410,937	2,733,471
<b>Financing activities:</b>		
Principal payment on debt obligations, including capital leases	(1,619,634)	(43,111)
Proceeds from sale of common stock and exercise of stock options, net		30,417
Net cash used in financing activities	(1,619,634)	(12,694)
Increase in cash and cash equivalents	3,176,324	159,994
Cash and cash equivalents at beginning of period	723,069	563,075
Cash and cash equivalents at end of period	\$ 3,899,393	\$ 723,069

**Supplemental cash flow information:**

Edgar Filing: NANOPHASE TECHNOLOGIES CORPORATION - Form 10-K

Interest paid	\$	22,407	\$	76,920
---------------	----	--------	----	--------

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

Accounts payable incurred for the purchase of equipment and leasehold improvements	\$	10,873	\$	35,626
--	----	--------	----	--------

(See accompanying Notes to Financial Statements)

F-6

---

**Table of Contents**

**NANOPHASE TECHNOLOGIES CORPORATION**

**NOTES TO FINANCIAL STATEMENTS**

**(1) 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, antimicrobial products and a variety of polishing applications, including semiconductors and optics. New markets and applications are also being developed. We target markets where we believe practical, high added value solutions are likely to be found using our nanoengineered products. We work with leaders in these targeted markets to identify and supply their material and performance requirements. Finally, we have applied our technology and developed a complete product family in 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 Global Market under the symbol NANX.

While product sales comprise the majority of our revenue, we also recognize revenue in connection with our promissory note to BYK Chemie that was fully repaid during July 2009 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.

**(2) Summary of Significant Accounting Policies**

**Use of Estimates**

The preparation of financial statements requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

**Cash and Cash Equivalents**

Cash and cash equivalents primarily consist of demand deposits, but also include certain lower risk investments with a stated maturity upon acquisition of 90 days or less (e.g., money market funds or a certificate of deposit with a maturity of 90 days or less at the time of purchase). The Company has employed corporate sweep accounts, when cost-effective in order to maximize interest income earned with its operating funds.

**Investments and Risks and Uncertainties**

Investments are classified at the time of purchase for appropriate designation and are reevaluated as of each balance sheet date. The Company's policy is to classify United States treasury bills and certificates of deposit with maturities at the time of purchase in excess of 90 days as investments. These investments are classified as available-for-sale and held-to maturity, respectively. Based on the nature of available-for-sale investments, cost approximates fair value. Held-to maturity securities are stated at amortized cost and are adjusted to maturity for the amortization of premiums and accretion of discounts. Such adjustments for amortization and accretion are included in interest income. We made investments in auction rate securities (ARS). These ARS holdings 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 at maturity to 97% of their \$4 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. These values were estimated as of December 31, 2009 and 2008 by an independent appraisal firm, Houlihan, Smith & Company, Inc., using a discounted cash flow model. Since these inputs were not observable they are classified as level 3 inputs (see Note 3). As a result, for the period ending December 31, 2008, we recognized an other than temporary loss on the ARSs in the amount of \$660,000 which was reflected in our statement of operations. We sold an ARS during October 2009, recognizing a loss of \$60,000 on the sale. This charge was recognized in our 2009 statement of operations. Our valuation models assumed an average maturity of the ARSs in excess of one year, therefore, we classified these securities as long-term on the December 31, 2008 balance sheet and we would have done so again on the December 31, 2009 balance sheet if not for a subsequent event. During March 2010, we entered into an agreement to sell these remaining ARS holdings as further described in Note 4. Due to this subsequent event, we classified these securities as current on the December 31, 2009 balance

sheet.

F-7

## **Table of Contents**

If not for this subsequent event, due to the level of liquidity risk associated with such investments and the level of uncertainty related to changes in the value of such investments, it would be at least reasonably possible that changes in risks in the near term would have materially affected the amounts reported in the financial statements.

### **Trade Accounts Receivable**

Trade accounts receivable are carried at original invoice amount less an estimate made for doubtful receivables based on a review of all outstanding amounts on a monthly basis. We determine the allowance for doubtful accounts by identifying troubled accounts and by using historical experience applied to an aging of accounts. Trade accounts receivable are written off when deemed uncollectible. Recoveries of trade accounts receivable previously written off are recorded when received.

The Company's typical credit terms are thirty days from shipment and invoicing.

### **Inventories**

Inventories are stated at the lower of cost, maintained on a first in, first out basis, or market. We have recorded allowances to reduce inventory relating to excess quantities of certain materials. Write-downs of inventories establish a new cost basis, which is not increased for future increases in market value of inventories or changes in estimated excess quantities.

### **Equipment and Leasehold Improvements**

Equipment is stated at cost and is being depreciated over its estimated useful life (3-20 years) using the straight-line method. Leasehold improvements are stated at cost and are being amortized using the straight-line method over the shorter of the useful life of the asset or the term of the lease (3-16 years). Depreciation expense for leased assets is included with depreciation expense for owned assets. From time to time the company has self-constructed assets. These assets are stated at cost plus the capitalization of labor and have an estimated useful life (7-10 years) using the straight-line method.

### **Long Lived Assets**

We follow the provisions of the FASB issued ASC 360-10-20 (formerly SFAS 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*). Reviews are performed whenever events or changes in circumstances indicate that the carrying amount of assets may not be recoverable or that the useful life is shorter than originally estimated. We assess the recoverability of its assets by comparing the projected undiscounted net cash flows associated with the related asset or group of assets over their remaining lives against their respective carrying amounts. Assessment is based on certain assumptions such as growth, capacity constraints, and the remaining economical life of the asset. Impairment, if any, is based on the excess of the carrying amount over the fair value of those assets. If assets are determined to be recoverable, but the useful lives are shorter than originally estimated, the net book value of the assets is depreciated over the newly determined remaining useful lives.



**Table of Contents****Asset Retirement Obligations**

In connection with its leased facilities, the Company is required to remove certain leasehold improvements upon termination of its occupancy. Effective January 1, 2003, the Company follows the provisions of the FASB issued ASC 410-20 (formerly SFAS 143, *Accounting for Asset Retirement Obligations*), under which the Company recognizes a liability for the fair value of its asset retirement obligations. The fair value of that liability is measured based on an expected cash flow approach and accretion expense is recognized each period to recognize increases to the fair value of the liability due to the passage of time. Increases to the fair value of the liability, except for accretion, are added to the carrying value of the long-lived asset. Those increases are then reported in amortization expense over the estimated useful life of the long-lived asset.

Activity in the asset retirement obligation account for the years ended December 31, is as follows:

	2009	2008
Balance, beginning	\$ 128,533	\$ 122,680
Accretion of liability due to passage of time	4,062	3,685
Amortization of asset due to passage of time	2,168	2,168
Balance, ending	\$ 134,763	\$ 128,533

**Fair Value of Financial Instruments**

On January 1, 2009, we adopted the provisions of FASB ASC Section 820-10-65 (formerly 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 FASB ASC Section 820-10-65 (formerly SFAS 157-2) for our nonfinancial assets and liabilities did not have a significant effect on our results of operations or financial condition (see Note 3).

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

**Product Revenue**

Product revenue consists of sales of product that are recognized when realized and earned. This occurs when persuasive evidence of an arrangement exists, title transfers via shipment of products or when delivery has occurred, the price is fixed or determinable and collectability is reasonably assured.

**Other Revenue**

In connection with our promissory note to BYK-Chemie (see Note 7), we recorded \$350,000 of deferred other revenue. The note required the Company to give BYK-Chemie first preference in use of the new equipment commissioned on November 1, 2006 and accordingly, resulted in the recognition of deferred revenue under this note on a straight-line basis over a period beginning with the commissioned date on November 1, 2006 and ending on July 30, 2009, the date of the Company's final payment under the note. For the years ended December 31, 2009 and 2008 the Company recognized approximately \$74,000 and \$127,000 of deferred other revenue, respectively.

## **Table of Contents**

In addition to deferred revenue described above, other revenue includes revenue from a technology license. Technology license fees are recognized when earned pursuant to the agreed upon contractual arrangement, when performance obligations are satisfied, the amount is fixed or determinable, and collectability is reasonably assured.

In December 1997, the Company entered into a license agreement whereby the Company granted a royalty-bearing exclusive right and license, as defined, to purchase, make, use and sell nanocrystalline materials in designated parts of Asia to CIK Nanotek (formerly C. I. Kasei), a subsidiary of Itochu Corporation ( CIK ). Under this agreement, the Company will also earn royalties on net sales of manufactured products containing nanocrystalline materials. The agreement also provided for minimum sales targets and minimum royalty payments to maintain exclusivity. The agreement expires on March 31, 2013 unless earlier terminated as provided therein. The Company recorded royalty revenues, classified as Other Revenue on the Statements of Operations, under this agreement of \$300,000 for each of the years ended December 31, 2009 and 2008, respectively.

Shipping and handling costs are included in other revenue when products are shipped and invoiced to the customer. The Company includes the related cost of shipping and handling in cost of goods sold.

## **Research and Development Expenses**

Research and development expenses are recognized as expense when incurred.

## **Income Taxes**

The Company accounts for income taxes using the liability method. As such, deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Deferred tax assets and liabilities are calculated using the enacted tax rates and laws that are expected to be in effect when the anticipated reversal of these differences is scheduled to occur. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized.

When tax returns are filed, it is highly certain that some positions taken would be sustained upon examination by the taxing authorities, while others are subject to uncertainty about merits of the position taken or the amount of the position that would be ultimately sustained. The benefit of a tax position is recognized in the financial statements in the period during which, based on all available evidence, management believes it is more likely than not that the position will be sustained upon examination, including the resolution of appeals or litigation processes, if any. Tax positions taken are not offset or aggregated with other positions. Tax positions that meet the more-likely-than-not recognition threshold are measured as the largest amount of tax benefit that is more than 50 percent likely of being realized upon settlement with the applicable taxing authority. The portion of the benefits associated with tax positions taken that exceeds the amount measured as described above is reflected as a liability for uncertain tax benefits in the accompanying balance sheets along with any associated interest and penalties that would be payable to the taxing authorities upon examination.

We have not recorded a reserve for any tax positions for which the ultimate deductibility is highly certain but for which there is uncertainty about the timing of such deductibility. The Company files tax returns in all appropriate jurisdictions, which include a federal tax return and Illinois state tax return. Open tax years for both jurisdictions are 2006 to 2009, which statutes expire in 2010 to 2013, respectively, under most cases and subject to appropriate laws and regulations. When and if applicable, potential interest and penalty costs are accrued as incurred, with expenses recognized in selling, general and administrative expenses in the statements of operations. As of December 31, 2009 and 2008, the Company has recognized a 100% valuation allowance on all deferred tax assets and has recognized no liabilities associated with its tax positions.

## **Table of Contents**

### **Earnings Per Share**

Net loss per common share is computed based upon the weighted average number of common shares outstanding. Included in common equivalent shares are in-the-money stock options and unvested restricted stock grants. No equivalent shares are included in 2009 and 2008 because stock options are anti-dilutive and restricted grants have all vested or expired.

### **Reclassifications**

Certain items in the 2008 financial statements have been reclassified to conform to the 2009 presentation with no effect on net loss.

### **Recently Issued Accounting Standards**

In June 2009, the FASB issued ASC 105-10 (formerly SFAS No. 168), The FASB Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles, which authorized the Codification as the sole source for authoritative U.S. GAAP. We adopted ASC 105-10 for the quarter ended September 30, 2009. The adoption did not have an effect on our financial position or results of operations.

In January 2010, the FASB issued ASU No. 2010-06, *Fair Value Measurements and Disclosures* (Topic 820): Improving Disclosures about Fair Value Measurements (ASU 2010-06). ASU 2010-06 requires some new disclosures and clarifies some existing disclosure requirements about fair value measurement as set forth in Codification Subtopic 820-10. ASU 2010-06 amends Codification Subtopic 820-10 to now require (1) a reporting entity disclose separately the amounts of significant transfers in and out of Level 1 and Level 2 fair value measurements and describe the reasons for the transfers; (2) in the reconciliation for fair value measurements using significant unobservable inputs, a reporting entity should present separately information about purchases, sales, issuances, and settlements and (3) a reporting entity should provide disclosures about the valuation techniques and inputs used to measure fair value for both recurring and nonrecurring fair value measurements. ASU 2010-06 is effective for interim and annual reporting periods beginning after December 15, 2009, except for the disclosures about purchases, sales, issuances, and settlements in the roll forward of activity in Level 3 fair value measurements. Those disclosures are effective for fiscal years beginning after December 15, 2010, and for interim periods within those fiscal years. We do not believe the adoption of ASU No. 2010-06 will have a material impact on our financial position or results of operations.

### **(3) Fair Value Measurements**

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

**Table of Contents**

As of December 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>	\$ 3,560,000	\$	\$	\$ 3,560,000
Other available-for-sale securities	4,604	4,604		
	\$ 3,564,604	\$ 4,604	\$	\$ 3,560,000

There are no financial liabilities adjusted to fair value on December 31, 2009.

(a) Based on appraisal net of any mark-to-market adjustments (see Note 4).

As of December 31, 2008, the fair values of our financial assets were 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>	6,880,000	6,880,000		
	\$ 12,220,000	\$ 6,880,000	\$	\$ 5,340,000

There were no financial liabilities adjusted to fair value on December 31, 2008.

(a) Based on defined rates for auction rate securities dependent on the participation of willing buyers (see Note 4). The Company has adopted FSP SFAS 157-3, determining the fair value of a financial asset when the market is not active. The consideration of FSP SFAS 157-3 resulted in an other than temporary impairment loss on the ARS s in the amount of \$660,000 which was reflected in the statement of operations.

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

**Table of Contents**

In February 2010, we hired Houlihan Smith & Company, an independent third party valuation firm, to update its previous estimate of the fair value of the Company's ARSs using a discounted cash flow analysis and an assessment of secondary markets. Based on this estimation and other factors, we concluded that the other than temporary impairment loss for the two securities we owned on December 31, 2009, that was recorded during 2008 in the amount of \$440,000, remained appropriate, and no change in value should be recorded during 2009. We monitored the credit worthiness of the companies underwriting these securities and made any adjustments we deemed necessary to reflect the fair value of these securities. A third ARS security was sold during October 2009. The sale proceeds were \$60,000 less than the adjusted carrying value of that security, so a corresponding charge was recognized during 2009. As further described in Note 4, during March 2010 we entered into an agreement under which we sold the remaining \$4 million of ARS holdings for \$4 million.

As of December 31, 2009, a reconciliation of assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3) are as follows:

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)	
	Auction Rate Securities 2009	2008
Beginning balance	\$ 5,340,000	\$
Transfers in to Level 3		6,000,000
Proceeds from sale of auction rate securities	(1,720,000)	
Total unrealized losses included in statement of operations		(660,000)
Total realized losses in excess of reserve included in statement of operations	(60,000)	
Ending balance	\$ 3,560,000	\$ 5,340,000
The amount of total losses included in the statement of operations attributable to the change in unrealized losses relating to assets still held at the reporting date	\$	\$ 660,000

**(4) Investments**

Investments on December 31, 2009 and 2008, were comprised of auction rate securities, certificates of deposit and a money market fund. Included in investments is \$30,000 on December 31, 2009 and 2008, respectively, in the form of 180 day certificates of deposit 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 auction rate securities are classified as long-term due to the stated maturity of the assets. Money market investments have maturity days of less than 30 days and thus are classified as cash equivalents. The Company's investments on December 31, 2009 and 2008 were as follows:

	As of December 31,	
	2009	2008
United States treasury bills	\$ 4,065	\$ 6,875,982
Certificates of deposit	30,000	30,000
Accrued interest	539	2,906
	34,604	6,908,888
Auction rate securities	3,560,000	5,340,000
	\$ 3,594,604	\$ 12,248,888

---

**Table of Contents**

As of March 5, 2010, our remaining investments in auction rate securities ( ARS ) totaled \$3.56 million, net of other than temporary impairment. These ARS holdings 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. Despite these failed auctions, there have been no defaults on the underlying securities or 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 \$4 million value by the Department of Education and we are not aware of any defaults or threatened defaults by any of the underlying securities, the risk of which we believe to be very low. However, these failed auctions caused us to change the level of inputs to determine their fair values. These values were estimated as of December 31, 2009 and 2008 by an independent appraisal firm, Houlihan, Smith & Company, Inc., using a discounted cash flow model. Since these inputs were not observable they are classified as Level 3 inputs (see Note 3). As a result, for the period ended December 31, 2008, we recognized an other than temporary impairment loss on our ARS holdings in the amount of \$660,000, thus reducing the original \$6 million in nominal value to \$5.34 million in net carrying value. After the sale of one \$2 million ARS investment during 2009, as described below, we had \$4 million gross value ARS holdings, to which \$440,000 of this other than temporary impairment applies. No adjustments in carrying value were made during 2009.

In October 2009, we sold a third ARS security, a \$2 million Connecticut Student Loan Foundation bond pursuant to a reverse auction tender offer initiated by the Connecticut Student Loan Foundation. Our net proceeds were \$1.72 million, with a realized loss of \$60,000 which we recognized in our statement of operations as of December 31, 2009. We were seeking the difference between the net proceeds and the \$2 million par value as part of our damages in the FINRA claim noted below. This information was considered when we performed a re-valuation of our ARS portfolio during the fourth quarter 2009.

We monitored the creditworthiness of the issuers and underwriting of these securities and made any adjustments we deemed necessary to reflect the fair value of these securities.

It has been our intention to sell these instruments for as close to their \$4 million value as possible as soon as we are able to do so. However, because we could not ascertain when we ultimately would sell these instruments, and they have stated maturities in excess of one year, we classified these securities as long-term on the December 31, 2008 balance sheet and would have done so again on the December 31, 2009 balance sheet if not for the subsequent event described below. Additional information about these securities, all with maturities in excess of 10 years, includes:

1. \$2 million principal value Brazos Higher Ed Auth 2006 A, which we value at approximately \$1.8 million based on a 5-6% liquidity premium and a very low risk of default. This instrument matures 12/1/2042 and carries a variable coupon interest rate (approximately 1.8% as of date of this filing, which has been impacted by depressed benchmark rates). This obligation is insured and collateralized by student loans.
2. \$2 million principal value Illinois Student Assistance Ser VIII-1, which we value at approximately \$1.8 million based on a 5-6% liquidity premium and a very low risk of default. This instrument matures 6/1/2045 and carries a variable coupon interest rate (coupon rates ranging between 1.7% and 0.5% during 2010, which has been impacted by depressed benchmark rates). This obligation is insured and collateralized by student loans.

**Table of Contents**

Pursuant to the applicable rules of the Financial Industry Regulatory Authority ( FINRA ), during 2009 we filed an arbitration demand against Credit Suisse Securities (USA) LLC ( Credit Suisse ), the Company s investment advisor with respect to our ARS investments. The hearing on our arbitration had been scheduled for April 2010. Pursuant to an agreement between the parties executed during March 2010, Credit Suisse agreed to purchase our remaining ARS holdings for \$4 million by March 31, 2010, and we agreed not to seek reimbursement for the \$280,000 loss realized on the sale of the Connecticut ARS bond (described above) or for legal and other costs. Under this agreement, the arbitration will not proceed and our arbitration claim has been resolved. As a result of this agreement, we classified the ARS securities as current and also recorded an expense recovery of \$440,000 and related other receivable on the December 31, 2009 financial statements.

**(5) Inventories**

Inventories consist of the following:

	As of December 31,	
	2009	2008
Raw materials	\$ 138,567	\$ 183,150
Finished goods	803,197	1,013,704
	941,764	1,196,854
Allowance for excess quantities	(57,438)	(42,647)
	\$ 884,326	\$ 1,154,207

**(6) Equipment and Leasehold Improvements**

Equipment and leasehold improvements consist of the following:

	As of December 31,	
	2009	2008
Machinery and equipment	\$ 12,976,005	\$ 12,911,175
Office equipment	714,871	637,112
Office furniture	108,093	78,242
Leasehold improvements	4,681,315	4,681,315
Construction in progress		38,170
	18,480,284	17,837,309
Less: Accumulated depreciation and amortization	(12,922,452)	(11,694,172)
	\$ 5,557,832	\$ 6,651,842

Depreciation expense was \$1,239,153 and \$1,279,826, for the years ended December 31, 2009 and 2008, respectively.

**Table of Contents****(7) Long-Term Debt**

We have no long-term debt as of December 31, 2009.

In November 2005, the Company executed a promissory note, held by BYK-Chemie (a U.S. subsidiary of Altana Chemie AG which owns approximately 6% of the Company's outstanding common stock) in the amount of \$1,597,420 for the purchase and installation of additional dispersion capacity and an additional NanoArc® synthesis reactor at the Company's Romeoville, Illinois facility. The note required that the Company give BYK-Chemie first preference in use of the new equipment commissioned on November 1, 2006 under this note, and that the Company agreed to provide experimental product made using this equipment. In addition, the Company also capitalized approximately \$74,000 in interest related to this note. The rate of interest in the note floated at 1% over LIBOR, measured on a quarterly average. Interest did not begin to accrue until one year after the commissioning of the specified equipment and principal was repaid in three equal payments during the first three quarters of 2009. Management determined that the required interest payments, including a flexible interest free period of more than a year, were substantially lower than the Company would be required to pay in a more traditionally underwritten equipment note. As such, management's imputation of interest, in accordance with the provisions of the FASB issued ASC 835-30 (formerly APB No. 21, Interest on Receivables and Payables), at 9% over the entire life of the note, its determination of a market interest rate, resulted in the Company recording a debt discount of \$350,000, having an unamortized balance of \$0 and \$27,074 on December 31, 2009 and 2008, respectively. Management further determined that the debt discount of \$350,000 recorded at the inception of the loan was attributable to deferred other revenue relating to the issuance of right of first preference on the new equipment being commissioned and the Company's commitment to provide experimental product. We repaid the entire \$1.6 million in debt during 2009, with our final payment made in July 2009 and are now debt-free.

**(8) Lease Commitments**

The Company leases its operating facilities under operating leases. On October 18, 2005 Nanophase entered into a Lease Amendment amending its current lease for its facility in Romeoville, Illinois, which, among other things, extended the term of such lease through December 31, 2015 (with the option to extend the term for two additional five year periods) and granted Nanophase an option to purchase such facility in certain instances. The current monthly rent on this lease amounts to \$27,100. Nanophase leases its Burr Ridge facility under an agreement whose initial term expired in September 1999. The Company renewed its Burr Ridge facility lease in September 2007 (with the option to extend the term for three additional one-year periods). The Company exercised its option to extend the lease for one year, which expires in September 2010. The current monthly rent on this lease amounts to \$11,860. At this time, the Company intends to renew this lease on or before September 2010.

The following is a schedule of future minimum lease payments including real estate taxes as required under the above operating leases:

<b>Year ending December 31:</b>	
2010	\$ 568,202
2011	423,510
2012	432,556
2013	440,439
2014	449,560
Thereafter	5,582,025
<b>Total minimum payments required:</b>	<b>\$ 7,896,292</b>

Rent expense, including real estate taxes, under these leases amounted to \$651,944 and \$633,925, for the years ended December 31, 2009 and 2008, respectively.

On December 31, 2009 and 2008, equipment under capital lease(s) had a cost of \$31,800 and \$137,552, respectively, with accumulated depreciation of \$19,080 and \$41,802, respectively. The Company had one capital lease as of December 31, 2009 and two capital leases as of December 31, 2008.



**Table of Contents****(9) Accrued Expenses**

Accrued expenses consist of the following:

	As of December 31,	
	2009	2008
Accrued payroll and related expenses	\$ 254,323	\$ 476,163
Accrued professional services	149,826	165,774
Other	105,057	130,230
	\$ 509,206	\$ 772,167

On December 31, 2009 and 2008, respectively, \$38,060 and \$541,014 remained in accrued severance.

**(10) Income Taxes**

The Company has no income tax provision, current or deferred, relating to U.S. federal, state or local income taxes.

A reconciliation of income tax expense to the amount computed by applying the Federal income tax rate to loss before provision for income taxes as of December 31, 2009 and 2008 is as follows:

	2009	2008
Income tax credit at statutory rates	\$ (1,662,377)	\$ (2,188,868)
Nondeductible expenses	7,260	6,579
State income tax, net of federal benefits	(232,342)	(305,926)
Other	(72,784)	
Increase in valuation allowance	1,960,243	2,488,215
	\$	\$

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred income taxes consist of the following:

	As of December 31,	
	2009	2008
Deferred tax assets (liabilities):		
Net operating loss carryforwards	\$ 31,347,000	\$ 30,161,000
Inventory and other allowances	36,000	30,000
Excess (tax) book depreciation	(79,000)	(111,000)
Excess (tax) book amortization	53,000	43,000
Investments		257,000
Patents and trademarks		83,000
Other accrued costs	276,000	280,000
Total deferred tax assets	31,633,000	30,743,000
Less: Valuation allowance	(31,633,000)	(30,743,000)
Deferred income taxes	\$	\$



**Table of Contents**

The valuation allowance increased approximately \$1.3 million and \$1.9 million for the years ended December 31, 2009 and 2008, respectively (net of approximately \$0.6 million for each of 2009 and 2008, respectively, for expiring net operating loss carryforwards and credits) due principally to the increase in the net operating loss carryforward and uncertainty as to whether future taxable income will be generated prior to the expiration of the carryforward period. In 2009, the change in deferred tax assets also includes a decrease of approximately \$435,000 to beginning of year net operating loss carryforward, and a corresponding decrease in beginning of year valuation allowance for changes in tax estimates recorded when the 2008 tax returns were filed. Under the Internal Revenue Code, certain ownership changes, including the prior issuance of preferred stock and the Company's public offering of common stock, may subject the Company to annual limitations on the utilization of its net operating loss carryforward. As of December 31, 2009, the amounts subject to limitations has not yet been determined.

The Company has net operating loss carryforwards for tax purposes of approximately \$80 million on December 31, 2009, which expire between 2010 and 2029.

**(11) Capital Stock**

In October 1998, pursuant to a Stockholder Rights Agreement between Nanophase and LaSalle National Association, as Rights Agent, the Company declared a dividend of one Preferred Stock Purchase Right (a "Right") for each outstanding share of Company common stock on November 10, 1998 and each share of common stock issued by the Company after such date. The Rights are not presently exercisable. Each Right entitles the holder, upon the occurrence of certain specified events, to purchase from the Company one ten-thousandth of a share of the Company's Series A Junior Participating Preferred Stock at a purchase price of \$25 per one-ten thousandth of a share (the "Purchase Price"). The Rights further provide that each Right will entitle the holder, upon the occurrence of certain specified events, to purchase from the Company, common stock having a value of twice the Purchase Price and, upon the occurrence of certain other specified events, to purchase from another entity into which the Company is merged or which acquires 50% or more of the Company's assets or earnings power, common stock of such other entity having a value of twice the Purchase Price. In general, the Rights may be redeemed by the Company at a price of \$0.01 per Right. The Rights expire on October 28, 2011. On September 5, 2003, the Company amended its Stockholder Rights Agreement to revise the beneficial ownership threshold at which a person or group of persons becomes an "acquiring person" and triggers certain provisions under the Stockholder Rights Agreement. As revised, a person or group would become an "acquiring person" if that person or group becomes the beneficial owner of 35% or more of the outstanding shares of the Company's stock. Prior to this amendment, the beneficial ownership threshold was 25%.

On January 30, 2009, the Company entered into an Amended and Restated Rights Agreement between the Company and Mellon Investor Services LLC, which amends and restates in its entirety the original Rights Agreement, dated as of October 28, 1998. The original Rights Agreement was amended and restated to appoint Mellon Investor Services LLC as the successor Rights Agent to LaSalle National Bank and to make certain conforming changes. No other material changes were made.

As of December 31, 2009 and 2008, the Company has 24,088 authorized shares of preferred stock, of which 2,500 shares have been designated as Series A Junior Participating Preferred Stock and reserved for issuance in connection with the Rights described above. Shares of Series A Junior Participating Preferred Stock are nonredeemable and subordinate to any other series of the Company's preferred stock, unless otherwise provided for in the terms of the preferred stock; has a preferential dividend in an amount equal to 10,000 times any dividend declared on each share of common stock; has 10,000 votes per share, voting together with the Company's common stock; and in the event of liquidation, entitles its holder to receive a preferred liquidation payment equal to 10,000 times the payment made per share of common stock. In addition, as of December 31, 2009, 1,700,880 authorized but unissued shares of common stock have been reserved for future issuance upon exercise of stock options.

**Table of Contents****(12) Stock Options and Stock Grants**

We have entered into stock option agreements with certain officers, employees, directors and three members of our former Advisory Board. The stock options generally expire ten years from the date of grant.

**Employees Stock Options**

The Company follows FASB ASC Topic 718 (formerly SFAS 123R), 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 \$427,117 and \$627,279 for the years ended December 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 and \$592,785 on December 31, 2009 and 2008, respectively.

As of December 31, 2009, there was approximately \$555,000 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 1.7 years.

**Fair Value and Assumptions Used to Calculate Fair Value under FASB ASC Topic 718 (formerly SFAS 123R)**

The following table illustrates the various assumptions used to calculate the Black-Scholes option pricing model for all years presented:

	<b>Years Ended December 31,</b>	
	<b>2009</b>	<b>2008</b>
Weighted-average risk-free interest rates:	2.64%	3.43%
Dividend yield:	0.00%	0.00%
Weighted-average expected life of the option:	7 years	7 years
Weighted-average expected stock price volatility:	73.68%	75.07%
Weighted-average fair value of the options granted:	\$ 0.74	\$ 2.22

The Company uses the Black-Scholes option pricing model to determine the fair value of stock based compensation. The Black-Scholes model requires the Company to make several assumptions, including the estimated length of time employees will retain their vested stock options before exercising them (expected term), the estimated volatility of the Company's common stock price over the expected term and estimated forfeitures. Expected price volatility of the fiscal 2009 and 2008 grants is based on the daily market rate changes of the Company's stock going back to January 1, 1998. The shares granted in fiscal 2009 and 2008 had a vesting period of either three or five years and a contractual life of 10 years. Forfeitures were estimated at 5.14% and 4.6% for the years ended December 31, 2009 and 2008, respectively, based on the Company's historical experience. The Black-Scholes model also requires a risk free interest rate, which is based on the U.S. Treasury yield curve in effect at the time of the grant, and the dividend yield on the Company's common stock, which is assumed to be zero since the Company does not pay dividends and has no current plans to do so in the future. Changes in these assumptions can materially affect the estimate of fair value of stock based compensation and consequently, the related expense recognized on the condensed consolidated statement of operations. The Company recognizes stock based compensation expense on a straight-line basis.

**Table of Contents**

The following table summarizes the Company's option activity for Nanophase Technologies Corporation employees and directors during the years ended December 31, 2009 and 2008:

<b>Options</b>	<b>Shares</b>	<b>Weighted Average Exercise Price per Share</b>	<b>Weighted Average Remaining Contractual Term (years)</b>	<b>Aggregate Intrinsic Value</b>
Outstanding on January 1, 2008	1,672,214	\$ 5.84		
Granted	340,000	\$ 3.11		
Exercised	(16,667)	\$ 3.30		
Forfeited or expired	(265,721)	\$ 3.79		
Outstanding on December 31, 2008	1,729,826			
Granted	340,750			
Exercised				
Forfeited or expired	(1,024,501)			
Outstanding on December 31, 2009	1,046,075	\$ 4.13	6.53	
Exercisable on December 31, 2009	542,289	\$ 6.00	4.52	
Shares available for grant	654,805			

The aggregate intrinsic value in the table above is zero, based on Nanophase's closing stock price of \$0.87 on the last business day for the period ended December 31, 2009.

During the years ended December 31, 2009 and 2008 the total intrinsic value of Nanophase stock options exercised was \$0 and \$24,517, respectively. Cash received for option exercises was \$0 and \$30,417 during the years ended December 31, 2009 and 2008. Based on the Company's election of the with and without approach, no realized tax benefits from stock options were recognized for the years ended December 31, 2009 and 2008.

During 2009, 1,024,501 stock options were forfeited primarily due to termination of officers in 2008 and 2009.

**Stock Appreciation Rights**

For the year ended December 31, 2009, the Company granted its outside directors stock appreciation rights (SARs) totaling 45,750 shares, under the Company's Amended and Restated 2006 Stock Appreciation Rights Plan. The fair value of the awards granted was \$14,550 and is included in non-cash compensation expense for the year ended December 31, 2009. The SARs granted vested immediately and are payable upon the directors' removal or resignation from the position of director. These awards are accounted for as liability awards, included in accrued expenses as of December 31, 2009, and adjusted to fair value each reporting period.

## **Table of Contents**

### Restricted Stock

For the years ended December 31, 2009 and 2008, the Company was to grant its outside directors shares of deferred common stock totaling 15,250 and 78,077 shares 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 \$180,000, respectively, for the restricted stock grants and is included in stock-based compensation expense for the years ending December 31, 2009 and 2008.

For the year ended December 31, 2008, the stock-based compensation (recovery) was (\$33,075) for non-director restricted stock. As of December 31, 2009 and 2008, respectively, the Company does not have any unvested non-director restricted stock or performance shares outstanding. For the year ended December 31, 2008, the fair value of performance shares vested was approximately \$7,400.

### **(13) 401(k) Profit-Sharing Plan**

We have a 401(k) profit-sharing plan covering substantially all employees who meet defined service requirements. In 2004, we amended the 401(k) plan providing for deferred salary contributions by the plan participants and maximum contributions by us of 100% of the first 3% and 50% of the next 2% of the participant's salary. The Company contributions under this plan were \$36,569 and \$158,541 for the years ended December 31, 2009 and 2008, respectively. We discontinued contributions to employees as of the first quarter of 2009. We intend to restart contributions at some point in the future.

### **(14) Significant Customers and Contingencies**

Revenue from two customers constituted approximately 63% and 13%, respectively, of the Company's 2009 revenue. Amounts included in accounts receivable on December 31, 2009 relating to these two customers were approximately \$372,000 and \$7,200, respectively. Revenue from these two customers constituted approximately 48% and 24%, respectively, of the Company's 2008 revenue. Amounts included in accounts receivable on December 31, 2008 relating to these two customers were approximately \$784,000 and \$31,000, respectively.

We currently have supply agreements with BASF Corporation (BASF), our 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 our failure to meet certain performance requirements, certain other obligations and/or certain financial condition covenants. The financial condition covenants in one of these supply agreements with BASF trigger a technology transfer (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, (b) of an acceleration of any debt maturity having a principal amount of more than \$10,000,000, or (c) our 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 our supply agreements with BASF, upon our breach of its contractual obligations to BASF, we 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.

## **Table of Contents**

We believe that we have sufficient cash and investment balances, including the value of the ARS portfolio (sold in March 2010 for \$4 million as part of the agreement disclosed herein) and with the debt-free balance sheet as of March 2010, to avoid the triggering events under the supply agreement with BASF through 2010. If a triggering event were to occur and BASF elected to proceed with the license and related equipment sale mentioned above, we would receive royalty payments from this customer for products sold using 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 or our technology development agreement with Altana Chemie. Any such event may 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.

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

Revenue from international sources approximated \$652,650 and \$676,828 for the years ended December 31, 2009 and 2008, respectively. As part of its revenue from international sources, the Company recognized approximately \$315,960 in product revenue from a number of German companies, in the aggregate, and \$300,000 in other revenue from a technology license fee from its Japanese licensee for the year ended December 31, 2009. Revenue from these same international sources approximated \$268,704 and \$300,000, respectively, for the year ended December 31, 2008. The \$300,000 technology license fee typically received every twelve months from our Japanese licensee is included in each of the two years presented.

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

### **(16) Severance Charges**

In the first quarter of 2009, we announced the resignations of Mr. Robert Haines, our then-current Vice-President of Operations, and Dr. Richard Brotzman, our then-current Chief Technology Officer. Additionally, we 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 our shift in strategy to develop a more customer-focused direct selling approach. During this process, we continue to seek to build our 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. On December 31, 2009, \$38,060 remained in accrued severance from these events.

In the third quarter of 2008, the Company announced the resignations of Mr. Joseph E. Cross, its then-current President and Chief Executive Officer and Mr. Kevin J. Wenta, its then-current Executive Vice-President of Sales and Marketing along with Mr. Edward Ludwig its then-current Vice-President of Business Development. As a result of these resignations, the Company incurred \$1,578,859 in severance charges. Included in these charges were salaries and benefits, accelerated vesting of stock options (non-cash) and other expenses. Of these charges, approximately \$593,000 or 38% were related to the accelerated vesting of stock options which had no cash impact and was expected to have a minimal dilutive effect if any.

**Table of Contents**

**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) 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, on the 30th day of March, 2010.

**NANOPHASE TECHNOLOGIES CORPORATION**

By: /s/ Jess Jankowski  
 Jess Jankowski  
 President and Chief Executive Officer

By: /s/ Frank Cesario  
 Frank Cesario  
 Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on the 30th day of March, 2010.

<b>Signature</b>	<b>Title</b>
/s/ Jess Jankowski Jess Jankowski	President, Chief Executive Officer (principal executive officer) and Director
/s/ Frank Cesario Frank Cesario	Chief Financial Officer (principal financial and chief accounting officer)
/s/ Donald S. Perkins Donald S. Perkins	Chairman of the Board and Director
/s/ George Vincent George Vincent	Vice Chairman of the Board and Director
/s/ James A. Henderson James A. Henderson	Director
/s/ James A. McClung James A. McClung	Director
/s/ Jerry Pearlman Jerry Pearlman	Director
/s/ Richard W. Siegel Richard W. Siegel	Director
/s/ R. Janet Whitmore R. Janet Whitmore	Director



**Table of Contents**

**EXHIBIT INDEX**

- 23.1 Consent of McGladrey & Pullen, LLP.
- 23.2 Consent of Houlihan Smith & Company Inc., dated February 24, 2010.
- 31.1 Certification of Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act.
- 31.2 Certification of the Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act.
- 32 Certification of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350.