Table of Contents

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2003 **Commission File Number 0-22333**

NANOPHASE TECHNOLOGIES CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**36-3687863**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer 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 (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 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 an accelerated filer (as defined in Exchange Act Rule 12B-2). 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, 2003 was $57,523,827 as of such date.

The number of shares outstanding of the registrant's common stock, par value $.01, as of March 26, 2004 was 17,371,814.

DOCUMENTS INCORPORATED BY REFERENCE

None.

PART I

Item 1. Business

General

Nanophase Technologies ("Nanophase" or the "Company") is a nanomaterials (also referred to as nanocrystalline materials or nanoparticles) developer and commercial manufacturer. Nanophase employs patented, patent-pending, and proprietary technology to create nanomaterials, typically in the range of 5-100 nanometers, which may be singular or multi-element oxides, including rare earth materials. Nanophase applies its technologies to modify the nanoparticle and nanoparticle surface to manipulate electrical, mechanical, optical, and other properties, while precisely controlling the particle size and other physical parameters. The Company also uses its technologies to create materials, not normally found naturally, that offer special performance attributes.

Since 2001, Nanophase has created an integrated platform of nanomaterial technologies that are designed to deliver an engineered nanomaterial solution for a particular target market or specific customer application. Nanophase's technologies consist of two distinct nanoparticle or nanomaterial manufacturing processes (physical vapor synthesis ("PVS") and NanoArc™ synthesis), nanoparticle surface treatment(s) technologies, and dispersion technologies. The Company has the ability to deliver various nanomaterials at commercial quantities. Nanophase's products are available as nanoparticles, surface-treated nanoparticles, and stable nanoparticle dispersions in aqueous or organic media, providing customers with nanomaterials in readily usable forms. The diverse markets Nanophase currently serves include personal care, sunscreens, abrasion-resistant applications, environmental catalysts, antimicrobial products, and a variety of polishing applications, including semiconductors, hard disk drives and optics. New markets and applications also are being developed. The Company's customers include multinational corporations and Fortune 500 companies.

Nanophase reduces the cycle time for innovation by working with certain customers to jointly develop nanoengineered solutions for particular market needs or specific customer applications. The Company has complete capability from application development and laboratory samples through pilot quantities and volume production. The Company has extensive research and development facilities and application laboratories, as well as manufacturing capacity based in two locations in the Chicago area. This capability allows Nanophase to develop and supply nanomaterials in quantities ranging from grams to metric tons. Nanophase's business model is based on strategic partnerships, typically with companies who currently occupy a targeted market channel(s), and supplying nanomaterials to individual customer-specific needs.

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 who rely on an array of worldwide sources for the materials that they process to the Company's specifications.

The Company was incorporated in Illinois on November 30, 1989 and merged into a Delaware corporation on November 25, 1997. The Company's common stock trades on the Nasdaq National Market under the symbol NANX.

Nanocrystalline Materials or Nanomaterials

Nanomaterials generally are made of particles (nanoparticles) that are less than 100 nanometers in diameter. A nanometer is a billionth of a meter. To put this in perspective, a six foot tall person is approximately two billion nanometers tall. Viewing the same analogy differently, if every person in the U.S. was only one nanometer tall, and all of these people were stacked one on top of the other, they would result in a figure less than 12 inches in height.

Nanomaterials are in the diverse field of nanotechnology, but are a distinct area of the field. Nanomaterial properties depend upon the composition, size, shape, structure, and surface of the individual particles, as well as possibly other parameters. Nanophase's methods for engineering and manufacturing nanocrystalline materials result in particles with a controlled size and shape, and surface characteristics that behave differently from conventionally produced larger-sized materials. The Company's control of nanoparticles allows it to engineer materials at a very small level to meet relatively precise application or performance requirements.

Typical uses for nanomaterials are in manufactured products (sunscreens) or in manufacturing processes (fine polishing, catalysts). In many applications, nanomaterials may offer advantages such as improved performance, lower overall product cost, or the development of new products or processes.

The Company's Technologies

Nanophase intends to maintain and grow its intellectual property position in the emerging science of nanomaterials through the development of new materials and processes, many of which management expects to result in the issuance of future patents (see "Item 1. Business–Intellectual Property and Proprietary Rights"). Nanophase has created an integrated platform of nanomaterial technologies that are patented, patent-pending, or proprietary and designed to deliver a nanomaterial solution for a particular market or specific customer application. Nanophase's technologies consist of two distinct nanoparticle, or nanomaterial, manufacturing processes (PVS and NanoArc™ synthesis), nanoparticle surface treatment(s) technologies, and dispersion technologies. These technologies define the equipment and methods used for the commercial manufacture of nanoparticles, surface-treatment and coating of nanoparticles, and dispersion of nanparticles in a variety of media. The Company's technologies have been demonstrably scalable and robust, having produced more than a hundred metric tons of nanomaterials during each of the last four years.

The Company uses its technologies to engineer and produce nanocrystalline materials designed for specific product applications. Currently, the Company's major nanomaterials, as represented by 2003 revenue and expected continued growth, are: coated zinc oxide for sunscreens, dispersed ceria for fine polishing applications, and uncoated zinc oxide for personal care applications. Nanophase has various other nanomaterials that it is selling to existing markets at lower volume levels. The Company hopes to expand the sales of some of these materials considerably, in terms of revenue, over time. Nanophase also is engaged in ongoing research, technology development, and, where appropriate, technology-licensing activities that add to its core technologies or provide complementary technologies. Part of the Company's strategy involves reviewing new technologies outside of the Company to potentially add to its internal research and development efforts. From time to time, in areas that are complementary to its growth strategies, the Company may license outside technology to augment its internally developed technologies. The Company's goal is to remain at the forefront of nanomaterials technologies.

Nanophase has been steadily expanding both its patented technologies and its ability to successfully practice these technologies. Through large-scale manufacturing of nanomaterials utilized in the manufacture of consumer sunscreen and personal care products, the Company has developed production expertise that has allowed it to improve processes relating to those nanomaterials, as well as processes relating to other nanomaterials. This experience has translated into additional patents and pending patents, and improvement of the Company's technologies and manufacturing processes to reduce variable manufacturing cost and improve gross margins.

Newer developed technologies have opened the capability for certain new products and new markets. With the commercialization of the Company's new NanoArc™ synthesis and new dispersion technologies in 2002, and the expansion of these capabilities in 2003, Nanophase is focusing on penetrating the chemical-mechanical-planarization ("CMP") and fine polishing markets. CMP is the process of polishing various types of integrated circuits or chips to be used in various commercial

electronics applications. Management believes that Nanophase's inroads in the CMP and fine polishing markets would have been very difficult without the Company being able to produce its materials to exacting specifications verified by in-house and customer-based testing.

Essentially all of the research and development at Nanophase is directly related to product development for applications. The Company endeavors to either meet specific stated customer needs or to develop applications solutions to unmet needs in a particular market where its materials may offer a distinct performance advantage, typically resulting in a lower system cost to customers. Management believes that aggressively pursuing applications, inventions and patents will help it maintain its position as a technical and commercial innovator in the nanomaterials field.

Marketing

The Company markets and sells its products through a combination of business development and sales activities in collaborative relationships with lead customers in various markets. Business development activities include evaluation and qualification of potential markets, identification of the lead customers within each market, and development of a business strategy for successful market penetration.

Nanophase typically forms a technical/marketing team that offers the customer an engineered solution to meet that customer's specific requirements. Nanophase tailors its materials to provide specific solutions required by its customers. Once a solution is established, application and customer management is moved to a sales team that is organized along market lines. The sales team is expected to increase revenue by selling product and process solutions and broadening the customer base through horizontal marketing. These collaborations often begin with sample requests from potential customers, followed by an open dialog regarding the needs of those potential customers and the capabilities of Nanophase. The ideal outcome for this type of collaboration is the mutual development and introduction of a product that results in significant revenue to both Nanophase and the customer.

In the case of BASF Corporation ("BASF"), much of the Company's collaboration has involved sharing information and developing the current product and next generation products to better perform within BASF's existing customers' various products and systems. BASF is currently the Company's largest customer. Nanophase and BASF have entered into a supply agreement that requires BASF to buy a minimum of 70% percent of its annual requirement of nanoscale zinc oxide for use in sunscreen and personal care products from Nanophase in order for BASF to retain its exclusive worldwide rights to use the Company's zinc oxide products in the sunscreen and personal care markets. This agreement, which has no set expiration date, can currently be terminated by either party with two years notice under certain conditions. In October of 2000, BASF agreed to lend the Company approximately $1.3 million to construct a nanoparticle coating facility at its Romeoville, Illinois location. See Note 7 to the Financial Statements and the "Liquidity and Capital Resources" section of "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations."

In the case of Rohm and Haas Electronic Materials ("RHEM"), formerly known as Rodel, the Company has collaborated in selling current generation ceria-based chemical-mechanical-planarization ("CMP") materials to RHEM's customers. RHEM and Nanophase have entered into a supply agreement which requires RHEM to purchase 100% of its annual requirements for, and specified minimum dollar amounts of, nanocrystalline ceria for use in CMP of semiconductors in order for RHEM to retain its exclusive worldwide rights to the Company's nanocrystalline ceria products in this field of use. In February of 2004, the Company amended its original agreement with RHEM. This amendment allows for RHEM to maintain its exclusivity based upon it purchasing lower dollar amounts, while extending the agreement through 2009. This amendment does not require RHEM to purchase any materials from the Company in 2004, but it does require an aggregate of $600,000 in development funding be paid to Nanophase in four equal quarterly installments in 2004 to support Nanophase's efforts in joint slurry product development with RHEM for current and future semiconductor technologies.

Unless prior written notice is given, the agreement automatically renews for successive five-year terms upon expiration of the initial term. The agreement can also be terminated in its entirety in the case of a change in control of either company or some form of material breach. Currently, the Company is working with RHEM on next generation ceria-based nanomaterials as well as on other nanomaterials geared toward attacking expanded CMP markets beyond those being reached with current nanomaterials.

The Company leverages its resources through relationships with organizations focused on market-specific (e.g., BASF) or geography-specific areas. These relationships enhance Nanophase's ability to quickly develop lead customers and applications for its products. For example, to promote a more rapid penetration into Japanese markets, the Company maintains its relationship with C. I. Kasei, a division of Itochu Corporation ("CIK"). CIK develops, engineers and manufactures products under license from the Company (specifically for the Company's PVS technology) for use in multiple industrial markets. The Company's agreement with CIK stipulates a minimum annual royalty of the greater of $300,000 or 4% of CIK's sales of licensed product, payable to the Company until 2013, to guarantee CIK an exclusive license in designated parts of Asia. After that time, the agreement calls for a royalty of 2% of CIK's sales of licensed product, at which time CIK's license of Nanophase's PVS technology in designated parts of Asia would become non-exclusive. CIK may terminate its agreement with the Company at any time upon 90 days prior written notice. Management does not believe that revenue related to the CIK agreement will contribute significantly, beyond the levels it has in the past, to the near-term growth of the Company.

On March 23, 2004, the Company received $10,000,000 in gross proceeds in the form of an equity investment from Altana Chemie, AG ("Altana"), a large German chemical company. Altana received 1,256,281 shares of Nanophase common stock. Altana and Nanophase have agreed that the shares will remain unregistered, and therefore not freely saleable, until March 23, 2006. Simultaneous to this transaction, the Company executed a joint development agreement (see Exhibit 10.29) with Altana in order to explore new product applications in fields that are mutually beneficial to both companies. Pursuant to the agreement, the Company and Altana have granted each other, subject to limited exceptions, exclusive rights for the development and purchase of nanomaterials for use in paints, coatings, inks, polymers and plastics, varnishes, and similar applications.

Management believes that this agreement will be beneficial to the Company in several ways. Altana is a prominent ingredient supplier to many industries that the Company has had limited success in approaching in the past (including paint and industrial coatings companies). By approaching these companies at the ingredient-supplier level, with the Company's materials already compounded into Altana's ingredient products, the Company expects a higher likelihood of success in various applications and in these industries.

Secondly, Altana has global sales, technical support, additional application development capability to incorporate nanomaterials, and an existing customer base and market relationships. Nanophase expects that this new partnership will help Nanophase to address markets at an entry point that should allow for quicker and broader adoption of nanomaterials in composite coatings and plastics. This mutually exclusive agreement is separate and distinct from the Company's existing agreements with BASF and RHEM, as the fields of application do not intersect. Management expects Altana to become a significant customer of Nanophase in 2005. The agreement with Altana has an initial term of eight years, with one-year renewal provisions.

A limited number of key customers account for a substantial portion of the Company's commercial revenue. In particular, revenue from BASF, RHEM, and CIK constituted approximately 61.0%, 22.4%, and 10.7%, respectively, of the Company's 2003 total revenue. The Company's customers are significantly larger than the Company and are able to exert a high degree of influence over the Company. While the Company's agreements with its three largest customers are long-term agreements,

they may be terminated by the customer with reasonable notice and do not provide any guarantees that these customers will continue to buy the Company's 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.

The Company, from time to time, employs marketing representatives or sales agents focused in specific application areas. Nanophase also markets itself and its capabilities by sponsoring, attending and presenting at advanced materials symposia and industry trade shows for its target markets, and by publishing articles in a variety of scientific and trade journals. The Company also markets itself and its capabilities through its Web site, by advertising in selected industry and trade journals, and by providing specification sheets and other marketing materials to prospective customers. In addition, Nanophase networks with certain Fortune 500 companies to display its technology and uncover potential applications. The Company often makes technical presentations at various events where the Company's scientists and business development people meet with their counterparts at other companies and explore potential technical relationships and collaborative applications research.

Technology and Engineering

The Company's Technology and Engineering Group includes the research and development, process engineering, and advanced engineering functions. Consistent with the Company's goal to remain at the forefront of nanomaterials technologies, the objective of Nanophase's research and process-development activities is to gather core technologies that have the capability to serve multiple markets commercially, continue to improve and evolve the Company's manufacturing technologies, and develop new nanomaterials and associated applications, usually working directly with potential and current customers.

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, 2003, 2002, and 2001 was $1,906,791, $1,572,997, and $1,601,671, respectively. The Company's future success will depend in large part upon its ability to keep pace with evolving advanced materials technologies and industry standards. Through the five-year period ended December 31, 2003, the Company has had cumulative research and development expenses of approximately $8.4 million and cumulative expenditures on equipment and leasehold improvements of approximately $10.0 million. These investments in technology and production capacity and capability have helped to take Nanophase from a development stage company to commercialization.

Manufacturing Operations

The Company's manufacturing operations include the production of nanomaterials in the form of nanoparticles, utilizing two different methods: "PVS" and NanoArc™ synthesis. The Company also has a large quantity nanoparticle coating operation to support its sunscreen business, as well as dispersion equipment to support its CMP and polishing initiatives and other product and market areas.

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 its nanomaterials in quantities ranging from grams to metric tons. Nanophase's facilities are certified to ISO 9001:2000 international standards and are substantially current Good Manufacturing Practices (cGMP) compliant for applicable bulk pharmaceutical manufacturing. All processes are controlled under Six-Sigma discipline with the capability to manufacture precisely to application requirements. Unlike traditional quality control, Six Sigma provides methods to reengineer processes to eliminate non-value added steps and create a system that minimizes errors and defects. Nanophase's operations employ a cellular team-based manufacturing approach, where workers operate in work "cells," under a Lean Manufacturing environment to continuously advance production capabilities.

Management is committed to a Lean Manufacturing approach where, to the extent possible given a certain measure of irregular demand, the Company is able to avoid excess labor, inventory, and supply levels in order to minimize working capital demands. This approach complements our production management in the sense that two of the Company's major production goals are to increase nanomaterials output without adding to existing equipment and the continuous reduction of production costs.

Intellectual Property and Proprietary Rights

Nanophase relies primarily on a combination of patent, trademark, trade secret and other intellectual property law, 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 also licenses certain third-party patents to expand its technology base. During 2003, Nanophase continued to strengthen its intellectual property portfolio by adding to its patents, pending patents, and proprietary knowledge. As of the date of this report, Nanophase owns or licenses 23 US patents and patent applications consisting of 9 owned US patents, 8 pending US patent applications and 6 licensed US patents. The 9 owned US patents consist of 6 for its nanoparticle synthesis technologies, 2 for its surface treatment technologies, and 1 for its nanoparticle applications in coating. The Company's pending US patents consist of 3 in nanoparticle synthesis, 2 in nanoparticle surface treatments involving dispersion of nanoparticles in various media, and 3 in nanoparticle applications. Correspondingly, the Company has 32 foreign patents and pending patent applications consisting of 9 owned foreign patents and 23 pending foreign patents. All of the pending and owned foreign patents are counterparts to domestic filings covering its platform of nanotechnologies. In addition, the Company's management believes that, based on its past experience, up to 3 of its currently pending patent applications will be issued in 2004. The Company's oldest patents will begin to expire in 2009.

See the "Risk Factors" section of "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" for a discussion of risks related to our intellectual property and proprietary rights.

Competition

Within each of its targeted markets and product applications, Nanophase faces current and potential competition from many advanced materials and chemical companies, suppliers of traditional materials and the in-house capabilities of several of its current and potential customers. In many markets, the Company's competitors are larger and more diversified than the Company, although management believes its materials and related technologies are superior to those of its competitors in terms of their ability to be readily engineered to meet specific performance requirements. With respect to traditional suppliers, however, the Company competes against lower priced traditional materials where the benefits of using nanomaterials does not always outweigh their typically higher costs. With respect to larger producers of nanomaterials, while many of these producers do not currently offer competitive products, these companies have greater financial and technical resources, larger research and development staffs, and greater manufacturing and marketing capabilities and could soon 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 significant and increasing competitive risks. Many of these companies are associated with university or national laboratories, and use chemical and physical methods to produce nanocrystalline materials. Management believes that most of these companies are engaged primarily in funded research, and is not aware that any of them have commercial production capabilities; however, they may represent competitive risks in the future. Some development stage companies, especially in other countries, receive significant local government assistance.

Governmental Regulations

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 current Good Manufacturing Practices (cGMP) requirements of the U.S. Food and Drug Administration ("FDA") and similar regulations in other countries that include testing, control and documentation requirements enforced by periodic inspections.

In addition, the Company's facilities and all of its operations are subject to the plant and laboratory safety requirements of various occupational safety and health laws. To date, those regulations have not materially restricted or impeded operations.

Employees

On December 31, 2003, the Company had a total of 49 full-time employees, 13 of whom hold advanced degrees. Nanophase has no collective bargaining arrangements.

On February 21, 2003, the Company announced that Dr. Donald J. Freed, its Vice President of Business Development, was retiring effective February 28, 2003. On March 23, 2003, the Company hired Dr. Edward G. Ludwig as its Vice President of Business Development. On December 19, 2002, the Company announced that Dr. Gina Kritchevsky, its Chief Technology Officer, had decided to pursue other interests and was returning to Arizona. The Company retained Dr. Kritchevsky's services through December 2003 as a consultant.

Backlog

Nanophase does not believe that a backlog as of any particular date is indicative of future results. The Company's sales are made primarily pursuant to purchase orders for delivery of 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, often do not obligate the customers either to purchase any particular quantity of such nanomaterials at all, or in the case where an obligation exists, the risk to the customer for not purchasing nanomaterials is the loss of exclusivity. The quantity 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. The Company does not believe that such agreements are meaningful for determining backlog amounts.

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 2004 and beyond to differ materially from those expressed in, or implied by, such statements. These risks, uncertainties and factors include, without limitation: a decision by a customer to cancel a purchase order or supply agreement in light of the Company's dependence on a limited number of key customers; uncertain demand for, and acceptance of, the Company's nanocrystalline materials; the Company's manufacturing capacity and product mix flexibility in light of customer demand; the Company's limited marketing experience; changes in development and distribution relationships; the impact of competitive products and technologies; the Company's dependence on patents and protection of proprietary information; the resolution of litigation in which the Company may become involved; and other risks set forth under the caption "Risk Factors" below. 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.

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. 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 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 Chicago suburbs. The Company also leases a 6,000 square-foot offsite warehouse in the same vicinity.

The Company's manufacturing operations in Burr Ridge are registered under ISO 9001:2000, and the Company's management believes that its manufacturing operations are substantially in compliance

with the current Good Manufacturing Practices (cGMP) requirements of the FDA for products that require such compliance. 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 the Company currently requires.

The Romeoville facility houses the Company's headquarters, advanced engineering, manufacturing (nanoparticle coating, nanoparticle dispersion, and pilot-scale manufacturing) and three research and development laboratories, and was used for additional commercial manufacturing space in 2003. All Romeoville manufacturing processes are certified to ISO 9001:2000 and the Company's management believes that the nanoparticle coating used for sunscreens and personal care is substantially in compliance with the cGMP requirements of the FDA.

Nanophase leases its Romeoville facility under an agreement. The initial term of the lease expires in July 2006, but the Company has an option to extend the lease for two additional periods of five years each. Nanophase also leases its Burr Ridge facility. The initial term of the lease expired in September 1999, but the Company has options to extend the lease for up to five additional one-year terms and is currently in the fifth additional one-year term, which expires in September 2004. While formal negotiations have not yet begun, management expects to extend the lease on its Burr Ridge facility for a future period to be negotiated in the next few months.

Management believes that the Company's leased facilities provide sufficient capacity to fulfill current known customer demand as well as providing additional space to enable expansion of key production processes. Management also believes that the Company's capital expenditures made in 2003 will support currently anticipated demand from existing customers. The Company's actual future capacity requirements will depend on many factors, including new and potential customer acceptance of the Company's current and potential nanocrystalline materials and product applications, unknown and currently unplanned growth from existing customers, continued progress in the Company's research and development activities and product testing programs, and the magnitude of these activities and programs.

Item 3. Legal Proceedings

See Note 19 to the Financial Statements for additional information.

Item 4. Submission of Matters to a Vote of Security Holders

No matters were submitted to a vote of the Company's security holders during the fourth quarter of 2003.

PART II

Item 5. Market for Registrant's Common Equity and Related Stockholder Matters

The Company's common stock is traded on the Nasdaq National 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 National Market:

	High	Low
Fiscal year ended December 31, 2003:		
First Quarter	$3.77	$2.10
Second Quarter	6.89	2.65
Third Quarter	8.34	3.56
Fourth Quarter	9.44	4.75
Fiscal year ended December 31, 2002:		
First Quarter	$8.69	$5.52
Second Quarter	8.38	4.53
Third Quarter	6.20	4.07
Fourth Quarter	4.75	2.42

On March 26, 2004, the last reported sale price of the common stock was $10.40 per share, and there were approximately 150 holders of record of the common stock.

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.

In January 2003, the Company granted 4,870 restricted shares of common stock to each of the following directors of the Company for services performed in their capacity as directors: Donald Perkins, James Henderson, James McClung, Jerry Pearlman, and Richard Siegel. Each of the preceding issuances was made in reliance on the exemption from registration found in section 4(2) of the Securities Act of 1933. None of these issuances were for any form of monetary consideration.

On September 8, 2003, the Company sold, in a private placement to a qualified accredited investor, 453,001 shares of common stock at $4.415 per share (together with a warrant to purchase a like number of shares of common stock during the next twelve months, also at a price of $4.415 per share) and received gross proceeds of $2 million. This negotiated price was calculated based upon average closing price of common stock during the preceding 15 days. This pricing calculation, which was made several days prior to closing, resulted in an approximate 19.7% discount from market pricing on the day of closing. The Company intends to use the proceeds to fund expected growth in new markets as well as to provide for expanded working capital needs expected to arise as sales volume grows. The preceding issuance was made in reliance on the exemption from registration found in Section 4(2) of the Securities Act of 1933. No placement agent was used in this private placement.

Item 6. Selected Financial Data

The following selected financial data is qualified by reference to, and should be read in conjunction with, the financial statements and related notes thereto appearing elsewhere in this Form 10-K and "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations." The selected financial data set forth below as of, and for, each of the years in the five-year period ended December 31, 2003 have been derived from the audited financial statements of the Company.

	Years Ended December 31,				
	2003	2002	2001	2000	1999
Statement of Operations Data:					
Product revenue	$ 4,880,313	$ 5,002,986	$ 3,650,914	$ 3,824,159	$ 1,128,861
Other revenue	566,348	398,229	404,574	449,194	295,986
Total revenue	5,446,661	5,401,215	4,055,488	4,273,353	1,424,847
Cost of revenue	5,205,065	5,095,019	4,906,716	4,754,485	2,610,667
Research and development expense	1,906,791	1,572,997	1,601,671	1,837,036	1,456,126
Selling, general and administrative expense	4,095,877	3,854,051	3,798,543	3,388,758	3,641,736
Total operating expenses	11,207,733	10,522,067	10,306,930	9,980,279	7,708,529
Loss from operations	(5,761,072)	(5,120,852)	(6,251,442)	(5,706,926)	(6,283,682)
Interest income	67,992	152,626	585,782	1,234,054	1,213,448
Interest expense	(109,889)	(125,181)	(33,485)	(3,455)	—
Other, net	5,319	6,844	(11,098)	(42,000)	(46,833)
Provision for income taxes	(30,000)	(68,674)	(30,000)	—	—
Net loss	$ (5,827,650)	$ (5,155,237)	$ (5,740,243)	$ (4,518,327)	$ (5,117,067)
Net loss per share-basic and diluted	$ (0.38)	$ (0.35)	$ (0.42)	$ (0.34)	$ (0.40)
Weighted average number of common shares outstanding	15,391,537	14,551,479	13,667,062	13,390,741	12,690,483

	As of December 31,				
	2003	2002	2001	2000	1999
Balance Sheet Data:					
Cash and cash equivalents	$ 399,999	$ 445,684	$ 582,579	$ 473,036	$ 624,509
Investments	4,562,364	7,062,808	6,842,956	16,831,721	21,216,168
Working capital	5,313,781	7,380,051	7,215,520	18,356,349	21,831,264
Total assets	16,242,819	20,012,970	19,184,388	23,830,163	25,677,539
Long-term obligations	263,669	364,563	812,390	827,984	—
Total stockholders' equity	13,719,087	16,832,965	15,643,618	21,007,745	24,161,323

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 "Item 6. Selected Financial Data," 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.

Overview

Nanophase Technologies is a nanocrystalline materials developer and commercial manufacturer with an integrated family of nanomaterial technologies. Nanophase produces engineered nanomaterials for use in a variety of diverse markets: personal care, sunscreens, abrasion-resistant applications, environmental catalysts, antimicrobial products, and a variety of polishing applications, including semiconductors, hard disk drives, and optics. Newer developed technologies have opened the capability for certain new products and new markets. With the commercialization of the Company's new NanoArc™ synthesis and new dispersion technologies in 2002, and the expansion of these capabilities in 2003, Nanophase is focusing on penetrating the chemical-mechanical-planarization ("CMP") and fine polishing markets. CMP is the process of polishing various types of integrated circuits or chips to be used in various commercial electronics applications. Management believes that the Company's inroads in the CMP and fine polishing markets would have been very difficult without the Company being able to produce its materials to exacting specifications verified by in-house and customer-based testing. Management expects growth in end-user (customers of Nanophase's customers) adoption in 2004 and revenue growth in both of these areas beginning in 2005.

The Company targets markets in which it feels practical solutions may be found using nanoengineered products. The Company works closely with leaders in these target markets to identify their material and performance requirements.

From its inception in November 1989 through December 31, 1996, the Company was in the development stage. During that period, the Company primarily focused on the development of its manufacturing processes in order to transition from laboratory-scale to commercial-scale production. As a result, the Company developed an operating capacity to produce significant quantities of its nanocrystalline materials for commercial sale. The Company was also engaged in the development of commercial applications and formulations and the recruiting of marketing, technical and administrative personnel. Since January 1, 1997, the Company has been engaged in commercial production and sales of its nanocrystalline materials, and the Company no longer considers itself in the development stage. From inception through December 31, 2003, the Company was primarily capitalized through the private offering of approximately $32 million of equity securities prior to its initial public offering, its initial public offering of $28.8 million of common stock in November of 1997, its private offering of $6.2 million of common stock in May of 2002 and its private offering of $2 million of common stock in September of 2003, each net of issuance costs. The Company has incurred cumulative losses of $45.7 million from inception through December 31, 2003.

Critical Accounting Policies

Nanophase utilizes certain accounting measurements under applicable generally accepted accounting principles that involve the exercise of management's judgment about subjective factors and estimates about the effect of matters which are inherently uncertain. Actual results may differ from these estimates. The following is a summary of those accounting measurements that involve business judgments which we believe are most critical to our reported results of operations and financial condition. Our significant accounting policies are more fully described in Note 2 to our financial statements.

Revenue Recognition. Product revenue consists of sales of product that are recognized when realized and earned. This occurs when persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable, and collectibility is reasonably assured. Other revenue consists of revenue from research and development arrangements with non-governmental entities, fees from the transfer of technology, and the sale of production equipment that is designed and built by the Company. Such sale of equipment occurred most recently in the first quarter of 2003. These types of equipment sales occur on occasion and are also treated as other revenue. This transaction is discussed in further detail below. Research and development arrangements include both cost-plus and fixed fee agreements and such revenue is recognized when specific milestones are met under the arrangements. Fees related to the transfer of technology are recognized when the transfer of technology to the acquiring party is completed and the Company has no further significant obligation. Royalties are recognized when earned pursuant to the contractual arrangement.

Inventory Valuation. Cost is determined on a first-in, first-out basis. Inventory is stated at the lower of cost, maintained on a first in, first out basis, or market. The Company has 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. If expected demand were either to unexpectedly accelerate or diminish for materials currently in inventory, this could cause management’s estimates to become inaccurate resulting in potential increases in inventory allowances (in the case of diminished demand), reducing gross margins or potential enhancements to gross margins caused by demand for items previously thought to have reduced near-term marketability.

Trade Accounts Receivable. Trade accounts receivable are carried at original invoice amount less an estimate made for doubtful receivables, typically based on a review of all outstanding amounts on a monthly basis. Management determines 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.

Impaired or Disposal of Long-Lived Assets. Reviews are regularly performed to determine whether facts and circumstances exist which indicate that the carrying amount of assets may not be recoverable or that the useful life is shorter than originally estimated. The Company assesses 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. 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 depreciable over the newly determined remaining useful lives.

Asset Retirement Obligations. The Company records the fair value of a liability for an asset retirement obligation which was recognized in the period it was incurred. The associated retirement costs are capitalized as a component of the carrying amount of the long-lived asset and allocated to expense over the useful life of the asset

Results of Operations

Years Ended December 31, 2003 and 2002

Total revenue increased to $5,446,661 in 2003, compared to $5,401,215 in 2002. The increase in total revenue between 2003 and 2002 was mainly attributed to the sale of production equipment to an existing customer as discussed below. Product revenue decreased to $4,880,313 in 2003, compared to $5,002,986 in 2002. The decrease in product revenue was primarily attributed to approximately $1.1 million in decreased sales from three sources; the Company's largest customer in the sunscreen and personal care markets and two other existing customers in the abrasion-resistant flooring and automotive catalyst markets. The Company and its largest customer currently have a technology agreement in place to jointly develop the second generation of sunscreen nanomaterials and for other potential personal care applications. Management expects increased demand for existing sunscreen and personal care materials, as well as the launching of several new applications, in 2004 when compared to 2003 levels. The decrease in sales from these three sources was somewhat offset by approximately $900,000 in increased revenue from RHEM, a customer since 2002, in the CMP market.

In February of 2004, the Company amended its original agreement with RHEM. This amendment allows for RHEM to maintain exclusivity based upon it purchasing lower dollar amounts of nanocrystalline materials, while extending the agreement through 2009. This amendment does not require RHEM to purchase any materials from the Company in 2004, but it does require an aggregate of $600,000 in development funding be paid to Nanophase in four equal quarterly installments in 2004 to support Nanophase's efforts in joint slurry product development with RHEM for current and future semiconductor technologies. Both companies remain optimistic over market adoption of the initial product in 2004 or 2005. In an additional smaller volume fine polishing application, the Company was selected as the recommended nanoparticle dispersion polishing supplier by a leading manufacturer of optical polishing equipment. Management believes that this vote of confidence, while not relating to substantial direct revenue, will help to establish Nanophase as a supplier of quality materials in the fine polishing market in general.

Other revenue increased to $566,348 in 2003, compared to $398,229 in 2002. This increase was largely due to revenue in the amount of $226,450 from the sale of a PVS reactor to CIK in 2003. These types of equipment sales occur on occasion (not on a regular annual basis) and are treated as other revenue.

The majority of the revenue generated during 2003 was from customers in the healthcare (sunscreens) and CMP markets. Revenue from BASF, RHEM, and CIK, the Company's three largest customers, constituted approximately 61.0%, 22.4%, and 10.7%, respectively, of the Company's 2003 total revenue.

Cost of revenue generally includes costs associated with commercial production and customer development arrangements. Cost of revenue increased to $5,205,065 in 2003, compared to $5,095,019 in 2002. The increase in cost of revenue was generally attributed to increased depreciation expense resulting from the completion of the Company's build-out of its manufacturing and powder coating facilities and increased facility costs. Cost of revenue as a percentage of total revenue increased from 94% in 2002 to 96% in 2003 due primarily to the effects of the completion of the Company's build-out of its manufacturing and powder coating facilities. Nanophase continued to reduce variable manufacturing costs on nanomaterials in 2003 with reductions ranging from 4% to 27%, depending upon the specific material. In 2003, Nanophase also successfully completed ISO9001:2000 certification (the current standard at the time) for its facilities in Romeoville, and Burr Ridge, Illinois. The extent to which the Company's margins remain positive, as a percentage of total revenue, will be dependent upon revenue mix, revenue volume, and the Company's ability to continue to cut costs. As product revenue volume increases, this will result in more of the Company's fixed manufacturing costs being absorbed, leading to increased margins. The Company expects to continue reducing its product manufacturing costs in 2004 but may not operate at a positive gross margin for 2004.

Research and development expense, which includes all expenses relating to the technology and advanced engineering groups, primarily consists of costs associated with the Company's development or acquisition of new product applications and coating formulations and the cost of enhancing the Company's manufacturing processes. For example, the Company is currently engaged in research to enhance its ability to disperse its material in a variety of organic and inorganic media for use as coatings and polishing materials. Recently, the Company has demonstrated the capability to produce pilot quantities of mixed-metal oxides in a single crystal phase. These materials include Cerium/Zirconium oxide, Cerium/Lanthanum/Zirconium oxide, Cerium/Praeseodymium/Zirconium oxide, and Cerium Samarium oxide. 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. This development has been driven largely by customer demand. Management is now working on several related commercial applications. The Company expects that this technique should not be difficult to scale to large quantity commercial volumes once application viability and firm demand are established. The Company also has an ongoing advanced engineering effort that is primarily focused on the development of new nanomaterials as well as the refinement of existing nanomaterials. The Company has recently expanded its palette of materials to include nanoscale copper oxide and bismuth oxide for potential use in a variety of applications. The Company is not certain when or if any significant revenue will be generated from the production of the materials described above. Research and development expense increased to $1,906,791 in 2003, compared to $1,572,997 in 2002. The increases in research and development expense was largely attributed to increased salaries due to no capitalization of labor in 2003 compared to approximately $149,000 in 2002, product development costs, depreciation, and travel expenses. In 2002, the capitalization of payroll occurred with several employees in the advanced engineering group relating to the build-out of its facilities. These increases were partially offset by decreased spending in repairs and maintenance expense. The Company does not expect research and development expense to increase significantly in 2004.

Selling, general and administrative expense increased to $4,095,877 in 2003, compared to $3,854,051 in 2002. The net increase was primarily attributed to business insurance, amortization expense relating to SFAS No. 143, Accounting for Asset Retirement Obligations adopted in 2003, consulting fees for various professional services not related to accounting fees, travel, accounting, and legal expenses, both relating to the Company's then-current securities litigation and more general legal issues. These increases were partially offset by decreases in director compensation due to recognition of this expense in a lump sum, when it was paid in January 2002 and additionally, as a monthly accrual throughout 2002. This treatment effectively resulted in twice as much total director compensation expense being recognized in 2002, the year of the change in recording convention, than in 2003.

Interest income decreased to $67,992 in 2003, compared to $152,626 in 2002. This decrease was primarily due to a reduction in funds available for investment and, to a lesser extent, reduced investment yields.

Years Ended December 31, 2002 and 2001

Total revenue increased to $5,401,215 in 2002, compared to $4,055,488 in 2001. The increase in total revenue between 2002 and 2001 was mainly attributed to growth with existing customers, particularly, an increase of approximately 29% in total product derived from the Company's largest customer. Product revenue increased to $5,002,986 in 2002, compared to $3,650,914 in 2001. Other revenue decreased to $398,229 in 2002, compared to $404,574 in 2001. The majority of the revenue generated during 2002 was from customers in the healthcare (sunscreen), wear-resistant materials, Chemical Mechanical Planarization (CMP) and catalyst markets. Revenue from BASF and CIK, the Company's two largest customers constituted approximately 72.6% and 6.8%, respectively, of the Company's 2002 total revenue.

Cost of revenue increased to $5,095,019 in 2002, compared to $4,906,716 in 2001. The increase in cost of revenue was generally attributed to increased product sales volume and increased depreciation expense resulting from the completion, and placement in service at the beginning of the current year and throughout the current year of the majority of the Company's build-out of its manufacturing and powder coating facilities, partially offset by efficiencies in the manufacture of the Company's products. Cost of revenue as a percentage of total revenue decreased from 121% in 2001, compared to 94% in 2002. Improvements to gross profit are primarily due to increased revenues, continued gains in operating efficiencies, and nonrecurring other revenue in the amount of $65,000 received in the second quarter. For the year 2002, the Company recognized a contribution of approximately $10,000 due to inventory being sold for which an allowance for excess inventory quantities had previously been recorded.

The Company's June 2002 announcement regarding its new CMP partner, RHEM, came about as a direct result of Nanophase's successful research and subsequent application development. The Company also has an ongoing advanced engineering effort that is primarily focused on the development of new nanomaterials as well as the refinement of existing nanomaterials. Research and development expense decreased to $1,572,997 in 2002, compared to $1,601,671 in 2001. The decreases in research and development expense was largely attributed to decreased outside testing, materials and supplies, and travel expenses being incurred in 2002. These reductions were somewhat offset by increased depreciation on assets completed and placed in service during 2002, increased advanced engineering salaries due to lower capitalization of payroll (approximately $149,000) in 2002 than in 2001 (approximately $180,000), and increased spending on electricity and equipment expenses. The capitalization of payroll for 2002 and 2001 is the result of the Company's build-out of its facilities.

Selling, general and administrative expense increased to $3,854,051 in 2002, compared to $3,798,543 in 2001. The net increase was primarily attributed to increases in salary expenses incurred relating to the hiring of a company executive, legal costs, real estate taxes, and bad debt expense which was zero at December 31, 2002, compared to a credit balance at December 31, 2001. These increases were partially offset by a reduction in investor relations, telephone, consulting fees, and travel expenditures.

Interest income decreased to $152,626 in 2002, compared to $585,782 in 2001. This decrease was primarily due to a reduction in average monthly funds available for investment and, to a lesser extent, reduced investment yields.

Liquidity and Capital Resources

The Company's cash, cash equivalents and investments amounted to $4,962,363 at December 31, 2003, compared to $7,508,492 at December 31, 2002. The net cash used in the Company's operating activities was $4,446,093, $4,091,187, and $5,166,170 for the years ended December 31, 2003, 2002, and 2001, respectively. Net cash provided by investing activities, which is due to maturities of securities offset partially by capital expenditures and purchases of securities, amounted to $2,001,764 for the year ended December 31, 2003 compared to $2,608,253 of net cash used in and $4,397,376 of net cash provided by investing activities for the years ended December 31, 2002 and 2001, respectively. Capital expenditures, primarily related to the continued build-out of the Company's new pilot manufacturing and powder blending facilities within its Romeoville, Illinois facility and further expansion of the Company's existing manufacturing facility in Burr Ridge, Illinois and the purchase of related operating equipment, amounted to $220,611, $1,483,808 and $5,465,697 for the years ended December 31, 2003, 2002, and 2001, respectively. During the first half of 2004, the Company expects to complete implementation of a PVS process innovation, within the current capital budget, that is expected to increase PVS reactor output by 20 to 30%. The Company expects that this innovation should result in the need for less future capital

as the Company's PVS reactor-produced business grows. Currently, all sunscreen and personal care nanomaterials are manufactured via the PVS process. Net cash provided by financing activities, is primarily due to the Company securing financing through a private placement in 2003 and 2002, and other financing agreements, and to a lesser extent by the issuance of shares of common stock pursuant to the exercise of options and warrants, partially offset by principal payments on debt and capital lease obligations, amounting to $2,398,644 for the year ended December 31, 2003, compared to $6,562,545 and $626,953 for the years ended December 31, 2002 and 2001, respectively.

On March 23, 2004, the Company sold, in a private placement to Altana, 1,256,281 shares of common stock at $7.96 per share and received gross proceeds of $10 million. On January 22, 2004 the Company filed a universal shelf registration statement with the Securities and Exchange Commission to allow Nanophase to offer up to $15 million of Nanophase securities, in the form of common stock or various types of debt securities, in the future. The registration statement relating to these securities has not yet been declared effective by the Securities and Exchange Commission. On September 8, 2003, the Company secured equity funding through a private placement offering with Grace Brothers, Ltd., its largest investor. The Company issued 453,001 shares of additional common stock at $4.415 per share and received gross proceeds of $2 million. Grace Brothers, Ltd. also has the right to purchase an additional 453,001 shares for an additional $2 million. On May 29, 2002, the Company secured equity funding through a private placement offering. The Company issued 1.37 million shares of additional common stock at $5.00 per share and received gross proceeds of $6.85 million. Net proceeds were approximately $6.2 million after commissions, legal, accounting, and other costs. The Company intends to use the proceeds from the foregoing offerings to fund expected growth in new markets as well as to provide for expanded working capital needs expected to arise as sales volume grows.

The Company's supply agreement with its largest customer contains several financial covenants which could potentially impact the Company's liquidity. The most restrictive financial covenants under this agreement require the Company to maintain a minimum of $2.0 million in cash, cash equivalents and investments, and no more than $10.0 million in debt, in order to avoid triggering a transfer of technology and equipment to the Company's largest customer. The Company had approximately $5 million in cash, cash equivalents and investments and debt of less than $1.4 million at December 31, 2003. Management expects that the proceeds received from the May 2002 and September 2003 private placement offerings, as well as the proceeds from the March 23, 2004 equity investment from Altana, should be sufficient to enable the Company to comply with these financial covenants for the foreseeable future. Further, the Company expects, although such events are not guaranteed, to receive at least some portion of an additional $15 million in equity capital in 2004 relating to its January 22, 2004 universal shelf registration filing and an additional $2 million in possible equity capital relating to the future exercise of warrants issued in its September 2003 fundraising prior to their expiration in September 2004. This additional funding should further allow the Company to avoid the previously mentioned triggering event for the foreseeable future. This supply agreement and its covenants are more fully described in Note 17 of the Company's financial statements. See "Risk Factors—We may need to raise additional capital in the future".

In November 2000, the Company executed a three-year promissory note, held by the Company's largest customer, in the amount of $1,293,895 for the construction of additional production capabilities at the Company's Romeoville, Illinois facility. Borrowings against this note amounted to $856,267 at December 31, 2003. The note bears interest at 8.45% per annum and is collateralized by certain powder coating, packaging, lab and related equipment. Contractually, the Company has seventeen months to pay back this note, based on a rate per kilogram of product shipped, with any remaining outstanding balance at June 1, 2005 becoming payable on demand.

The Company believes that cash from operations and cash, cash equivalents and investments on hand (which includes the $10,000,000 in gross proceeds from the March 23, 2004 private placement) and interest income thereon, will be adequate to fund the Company's operating plans for the foreseeable

future. The Company's actual future capital requirements in 2004 and beyond will depend, however, on many factors, including customer acceptance of the Company's current and potential nanocrystalline materials and product applications, continued progress in the Company's research and development activities and product testing programs, the magnitude of these activities and programs, and the costs necessary to increase and expand the Company's manufacturing capabilities and to market and sell the Company's materials and product applications. Other important issues that will drive future capital requirements will be the development of new markets and new customers as well as the potential for significant unplanned growth with the Company's existing customers. The Company expects that capital spending relating to currently known capital needs in 2004 will be somewhat greater than the Company's $220,611 in capital expenditures in 2003, but could be even greater due to the factors discussed above.

Should events arise that make it appropriate for the Company to seek additional financing, it should be noted that additional financing may not be available on acceptable terms or at all, and any such additional financing could be dilutive to the Company's stockholders. Such a financing could be necessitated by such things as the loss of existing customers; currently unknown capital requirements in light of the factors described above; new regulatory requirements that are outside the Company's control; the need to meet previously discussed cash requirements to avoid a triggering event; or various other circumstances coming to pass that are currently not anticipated by the Company.

The following table highlights the Company's contractual obligations as of December 31, 2003:

Contractual Obligations	Payments due by period				
	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Long-Term Debt	$ 1,286,222	1,034,379	251,843	—	—
Capital Lease Obligations	$ 58,524	46,413	12,111	—	—
Operating Leases	$ 896,991	401,991	495,000	—	—
Unfulfilled Purchase Orders	$ 52,948	52,948	—	—	—
Totals	$ 2,294,685	$ 1,535,731	$ 758,954	—	—

At December 31, 2003, the Company had a net operating loss carryforward of approximately $52.4 million for income tax purposes. Because the Company may have experienced "ownership changes" within the meaning of the U.S. Internal Revenue Code in connection with its various prior equity offerings, future utilization of this carryforward may be subject to certain limitations as defined by the Internal Revenue Code. If not utilized, the carryforward expires at various dates between 2005 and 2014. As a result of the annual limitation and uncertainty as to the amount of future taxable income that will be earned prior to the expiration of the carryforward, the Company has concluded that it is likely that some portion of this carryforward will expire before ultimately becoming available to reduce income tax liabilities. At December 31, 2003, the Company also had a foreign tax credit carryforward of $156,000, which could be used as an offsetting tax credit to reduce U.S. income taxes. The foreign tax credit will expire in 2014, if not utilized before that date.

Risk Factors

The following risks, uncertainties, and other factors could have a material adverse affect on our business, financial condition, operating results, and growth prospects.

We have a limited operating history and may not be able to address difficulties encountered by early stage companies in new and rapidly evolving markets.

We have only a limited operating history. We were formed in November 1989 and began our commercial nanocrystalline materials operations in January 1997. We have not yet generated a significant amount of revenue from our nanocrystalline materials operations. Because of our limited operating history and the early stage of development of our rapidly evolving market, we have limited insight into trends that may emerge and adversely affect our business and cannot be certain that our business strategy will be successful or that it will successfully address these risks. In addition, our efforts to address any of these risks may distract personnel or divert resources from other more important initiatives, such as attracting and retaining customers and responding to competitive market conditions.

We have a history of losses that may continue in the future.

We have incurred net losses in each year since our inception with net losses of $5.74 million in 2001, $5.16 million in 2002 and $5.83 million in 2003. As of December 31, 2003, we had an accumulated deficit of approximately $45.74 million and presently expect to continue to incur losses on an annual basis through at least the end of 2004. We believe that our business depends, among other things, on our ability to significantly increase revenue. If revenue fails to grow at anticipated rates or if operating expenses increase without a commensurate increase in revenue, or if we fail to adjust operating expense levels accordingly, then the imbalance between revenue and operating expenses will negatively impact our cash balances and our ability to achieve profitability in future periods.

We depend on a small number of customers for a high percentage of our sales, and the loss of orders from a significant customer could cause a decline in revenue and/or increases in the level of losses incurred.

Sales to our customers are executed pursuant to purchase orders and annual supply contracts; however, customers can cease doing business with us at any time with limited advance notice. We expect a significant portion of our future sales to remain concentrated within a limited number of strategic customers. We may not be able to retain our strategic customers, such customers may cancel or reschedule orders, or in the event of canceled orders, such orders may not be replaced by other sales or by sales that are on as favorable terms. In addition, sales to any particular customer may fluctuate significantly from quarter to quarter, which could affect our ability to achieve anticipated revenues on a quarterly basis.

Sales to BASF Corporation, Rohm and Haas Electronic Materials (formerly known as “Rodel”) and C.I. Kasei, a division of Itochu Corporation, accounted for approximately 94% of total revenue for the year ended December 31, 2003, and sales to the same three customers accounted for approximately 81% of total revenue in 2002. For the years ended December 31, 2003 and 2002, BASF accounted for 61% and 73% of our total revenue, respectively. If we were to lose, or receive significantly decreased orders from, any of these three customers, then our results of operations would be materially harmed. While our agreements with our three largest customers are long-term agreements, they may be terminated by the customer with reasonable notice and do not provide any guarantees that these customers will continue to buy our products. In addition, while our agreements with our three largest customers contain minimum order requirements, the only repercussion under the agreements for missing the minimum order requirement is that we would be freed from the exclusivity obligations under these contracts.

We have been consistently expanding both our marketing and business development efforts and our production efficiency in order to address the issues of our dependence upon a limited amount of customers, enhancement of gross profit and operating cash flows, and the achievement of profitability. We currently have customers that may grow to the point where they generate significant revenues and margins as relationships expand. Given the special nature of our products, and the fact that markets for them are not yet fully developed, it is difficult to accurately predict when additional large customers will materialize. On a going forward basis, the Company's margins, as a percentage of revenue, will be dependent upon revenue mix, revenue volume, and the Company's ability to continue to cut costs. The extent of the growth in revenue volume, and the related gross profit that this revenue generates, will be the main drivers in generating positive operating cash flows and, ultimately, net income.

Any downturn in the markets served by us would harm our business.

A majority of our products are incorporated into products such as sunscreens, polishing slurries, personal care, and to a lesser extent abrasion-resistant coatings for flooring, and catalytic converters. These markets have from time to time experienced cyclical, depressed business conditions, often in connection with, or in anticipation of, a decline in general economic conditions. These industry downturns have resulted in reduced product demand and declining average selling prices. Our business would be harmed by any future downturns in the markets that we serve.

Our products often have long adoption cycles, which could make it difficult to achieve market acceptance and makes it difficult to forecast revenues.

Due to their often novel characteristics and the unfamiliarity with them that exists in the marketplace, our nanocrystalline materials often exhibit longer adoption cycles than existing materials technologies. Our nanomaterials have to receive appropriate attention within any potential customer's organization, then they must be tested to prove a performance advantage over existing materials, typically on a systems-cost basis. Once we have proven initial commercial viability, pilot scale production runs must be completed by the customer, followed by further testing. Once production-level commercial viability is established, then our nanomaterials can be introduced, often to a downstream marketplace that needs to be familiarized with them. If we are unable to convince our potential customers of the performance advantages and economic value of our nanocrystalline materials over existing and competing materials and technologies, we will be unable to generate significant sales. Our long adoption cycle makes it difficult to predict when sales will occur.

We depend on collaborative development relationships with our customers and do not have a substantial direct sales force. If we are unable to initiate or sustain such collaborative relationships, then we may be unable to independently develop, manufacture or market our current and future nanocrystalline materials or applications.

We have established, and will continue to pursue, collaborative relationships with many of our customers and do not have a substantial direct sales force. Through these relationships, we seek to develop new applications for our nanocrystalline materials and share development and manufacturing resources. We also seek to coordinate the development, manufacture and marketing of our nanocrystalline products. Future success will depend, in part, on our continued relationships with these customers and our ability to enter into similar collaborative relationships with other customers. Our customers may not continue in these collaborative development relationships, may not devote sufficient resources to the development or sale of our materials or may enter into collaborative development relationships with our competitors. Additionally, these customers may require a share of control of these collaborative programs. Some of our agreements with these customers limit our ability to license our technology to others and/or limit our ability to engage in certain product development or marketing activities. These relationships can usually be terminated unilaterally by customers. If we are unable to initiate or sustain such collaborative relationships, then we may be unable to independently develop, manufacture or market our current and future nanocrystalline materials or applications.

In addition, the development agreements with some of our larger customers contain provisions that require us to license our intellectual property to these customers on disadvantaged terms and/or transfer equipment to these customers in the event that we materially breach these agreements or fail to satisfy certain financial covenants. For example, see "Risk Factors—We may need to raise additional capital in the future."

If a catastrophe strikes either of our manufacturing facilities or if we were to lose our lease for either facility due to non-renewal or other unforeseen events, we may be unable to manufacture our materials to meet customers' demands.

Our manufacturing facilities are located in Romeoville and Burr Ridge, Illinois. These facilities and some of our manufacturing and testing equipment would be difficult to replace in a timely manner. Therefore, any material disruption at one of our facilities due to a natural or man-made disaster or a loss of lease due to non-renewal or other unforeseen events could have a material adverse effect on our ability to manufacture products to meet customers' demands. While we maintain customary property and business interruption insurance, this insurance may not adequately compensate us for all losses that we may incur.

If we are unable to expand our production capabilities to meet unexpected demand, we may be unable to manage our growth and our business would suffer.

Our success will depend, in part, on our ability to manufacture nanocrystalline materials in significant quantities, with consistent quality and in an efficient and timely manner. We expect to continue to expand our current facilities or obtain additional facilities in the future in order to respond to unexpected demand for existing materials or for new materials that we do not currently make in quantity. Such unplanned demand, if it resulted in rapid expansion, could create a situation where growth could become difficult to manage, which could cause us to lose potential revenue.

Protection of our intellectual property is limited and uncertain.

Our intellectual property is important to our business. We seek to protect our intellectual property through patent, trademark, trade secret protection and confidentiality or license agreements with our employees, customers, suppliers and others. Our means of protecting our intellectual property rights in the United States or abroad may not be adequate and others, including our competitors, may use our proprietary technology without our consent. We may not receive the necessary patent protection for any applications pending with the U.S. Patent and Trademark Office and any of the patents that we currently own or license may not be sufficient to keep competitors from using our materials or processes. In addition, patents that we currently own or license may not be held valid if subsequently challenged by others and others may claim rights in the patents and other proprietary technology that we own or license. Additionally, others may have already developed or may subsequently develop similar products or technologies without violating any of our proprietary rights. If we fail to obtain patent protection or preserve our trade secrets, we may be unable to effectively compete against others offering similar products and services. In addition, if we fail to operate without infringing the proprietary rights of others or lose any license to technology that we currently have or will acquire in the future, we may be unable to continue making the products that we currently make.

Moreover, at times, attempts may be made to challenge the prior issuance of our patents. For example, we have received a petition to request a re-examination proceeding filed by an unidentified party in the U.S. Patent and Trademark Office, or USPTO, with respect to one patent relating to one of our nanoparticle manufacturing processes. If a re-examination is granted, we may not be successful in maintaining the scope of the claims of this patent during re-examination. If our patent claims are

narrowed substantially by the USPTO, the patent coverage afforded our nanoparticle manufacturing process could be impaired, which could impede the extent of our legal protection of the invention that is subject to this patent and potentially harm our business and operating results.

Furthermore, litigation may be necessary to enforce our intellectual property rights, to protect our trade secrets, to determinate the validity and scope of the proprietary rights of others, or to defend against claims of infringement or invalidity. Such litigation could result in substantial costs and diversion of resources and could harm our business, operating results and financial condition. In addition, if others assert that our technology infringes their intellectual property rights, resolving the dispute could divert our management team and financial resources.

In the future, we may license certain of our intellectual property, such as trademarks or copyrighted material, to third parties. While we would attempt to ensure that any licensees maintain the quality and value of our brand, these licenses might diminish this quality and value.

We may be subject to claims that one or more of the business methods used by us infringe upon patents held by others. The defense of any claims of infringement made against us by third parties could involve significant legal costs and require our management to divert time and other resources from our business operations. Either of these consequences of an infringement claim could have a material adverse effect on our operating results. If we are unsuccessful in defending any claims of infringement, we may be forced to obtain licenses or pay royalties to continue to use our technology. We may not be able to obtain any necessary licenses on commercially reasonable terms or at all. If we fail to obtain necessary licenses or other rights, or if these licenses are costly, our operating results may suffer either from reductions in revenue through our inability to serve clients or from increases in costs to license third-party technology.

Our industry is experiencing rapid changes in technology. If we are unable to keep pace with these changes, our business will not grow.

Rapid changes have occurred, and are likely to continue to occur, in the development of advanced materials and processes. Our success will depend, in large part, upon our ability to keep pace with advanced materials technologies, industry standards and market trends and to develop and introduce new and improved products on a timely basis. We expect to commit substantial resources to develop our technologies and product applications and, in the future, to expand our commercial manufacturing capacity as volume grows. Our development efforts may be rendered obsolete by the research efforts and technological advances of others and other advanced materials may prove more advantageous than those we produce.

Our market is highly competitive, and if we are unable to compete effectively, then our business will not grow.

The advanced materials industry is new, rapidly evolving and intensely competitive, and we expect competition to intensify in the future. The market for materials having the characteristics and potential uses of our nanocrystalline materials is the subject of intensive research and development efforts by both governmental entities and private enterprises around the world. We believe that the level of competition will increase further as more product applications with significant commercial potential are developed. The nanocrystalline product applications that we are developing will compete directly with products incorporating both conventional and advanced materials and technologies. While we are not currently aware of the existence of commercially available competitive products with the same attributes as those we offer, other companies may develop and introduce new or competitive products. Our competitors may succeed in developing or marketing materials, technologies and better or less expensive products than the ones we offer. In addition, many of our potential competitors have substantially greater financial and technical resources, and greater manufacturing and marketing capabilities than we do. If we

fail to improve our current and potential nanocrystalline product applications at an acceptable price, or otherwise compete with producers of conventional materials, we will lose market share and revenue to our competitors.

We may need to raise additional capital in the future. If we are unable to obtain adequate funds, we may be required to delay, scale-back or eliminate some of our manufacturing and marketing operations or we may need to obtain funds through arrangements on less favorable terms or we may be required to transfer equipment to our largest customer.

We expect to expend significant resources on research, development and product testing, and in expanding current capacity or capability for new business. In addition, we may incur significant costs in preparing, filing, prosecuting, maintaining and enforcing our patents and other proprietary rights. If necessary, we may seek funding through public or private financing and through contracts with government or other companies. Additional financing may not be available on acceptable terms or at all. If we are unable to obtain adequate funds, we may be required to delay, scale-back or eliminate some of our manufacturing and marketing operations or we may need to obtain funds through arrangements on less favorable terms. If we obtain funding on unfavorable terms, we may be required to relinquish rights to some of our intellectual property.

To raise additional funds in the future, we would likely sell our equity or debt securities or enter into loan agreements. To the extent that we issue debt securities or enter into loan agreements, we may become subject to financial, operational and other covenants that we must observe. In the event that we were to breach any of these covenants, then the amounts due under such loans or debt securities could become immediately payable by us, which could significantly harm us. To the extent that we sell additional shares of our equity securities, our stockholders may face economic dilution and dilution of their percentage ownership.

We currently have a supply agreement with BASF that contains provisions which could potentially result in a mandatory transfer of technology and sale of production equipment to BASF providing capacity sufficient to meet BASF's production needs. The transfer and related sale would be "triggered" only in the event that one of the following occurs:

- our earnings for a twelve month period ending with our most recently published quarterly financial statements are less than zero and our cash, cash equivalents and investments are less than $2,000,000,
- any lender accelerates any debt in excess of $10,000,000, or
- we become insolvent as defined in the supply agreement.

In the event of a triggering event where we are required to sell to BASF production equipment providing capacity sufficient to meet BASF's production needs, the equipment would be sold at 115% of the equipment's net book value.

We believe that we have complied with all contractual requirements and that we have not had a "triggering event." We further believe that the proceeds of the May 29, 2002 and September 8, 2003 private placements, in addition to the proceeds from the equity investment by Altana on March 23, 2004, should provide sufficient cash balances to avoid the first triggering event referenced above for the foreseeable future. Further, we expect, although such events are not guaranteed, to receive at least some portion of an additional $15,000,000 in equity capital in 2004 relating to our January 22, 2004 universal shelf registration filing and to receive an additional $2,000,000 in possible equity capital relating to the future exercise of warrants relating to the September 2003 fundraising. If a triggering event were to occur and BASF elected to proceed with the transfer and related sale mentioned above, 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 would be purchased and removed by BASF pursuant to this triggering event could take six months to a year. Any additional capital outlays required to rebuild capacity would probably be greater than the proceeds from the purchase of the assets pursuant to our agreement with BASF. This shortfall might put us in a position where it would be difficult to secure additional funding given what would then be an already tenuous cash position. Such an event would also result in the loss of many of the Company's key staff and line employees due to economic realities. We believe that our employees are a critical component of our success and would be difficult to quickly replace and train. Given the occurrence of such an event, we might not be able to hire and retrain skilled employees given the stigma relating to such an event and its impact on us. We might elect to effectively reduce our size and staffing to a point where we could remain a going concern in the near term.

We depend on key personnel, and their unplanned departure could harm or business.

Our success will depend, in large part, upon our ability to attract and retain highly qualified research and development, management, manufacturing, marketing and sales personnel on favorable terms. Due to the specialized nature of our business, we may have difficulty locating, hiring and retaining qualified personnel on favorable terms. If we were to lose the services of any of our key executive officers or other key personnel, or if we are unable to attract and retain other skilled and experienced personnel on acceptable terms in the future, then our business, results of operations and financial condition would be materially harmed. In addition, we do not currently have "key-man" life insurance policies covering all of our executive officers or key employees, nor do we presently have any plans to purchase such policies.

We face potential product liability risks which could result in significant costs that exceed our insurance coverage, damage our reputation and harm our business.

We may be subject to product liability claims in the event that any of our nanocrystalline product applications are alleged to be defective or cause harmful effects. Because our nanocrystalline materials are used in other companies' products, to the extent our customers become subject to suits relating to their products, such as medical implants and cosmetic and skin-care products, these claims may also be asserted against us. We may incur significant costs including payment of significant damages, in defending or settling product liability claims. We currently maintain insurance coverage in the amount of $10 million for product liability claims, which may prove not to be sufficient. Even if a suit is without merit and regardless of the outcome, claims can divert management time and attention, injure our reputation and adversely affect demand for our nanocrystalline materials.

We are subject to governmental regulations. The costs of compliance and liability for noncompliance with governmental regulations could have a material adverse effect on our business, results of operations and financial condition.

Current and future laws and regulations may require us to make substantial expenditures for preventive or remedial action. Our operations, business or assets may be materially and adversely affected by governmental interpretation and enforcement of current or future environmental, health and safety laws and regulations. In addition, our coating operations pose a risk of accidental contamination or injury. The damages in the event of an accident or the costs to prevent or remediate a related event could exceed our resources or otherwise have a material adverse effect on our business, results of operations and financial condition.

In addition, both of our facilities and all of our operations are subject to the plant and laboratory safety requirements of various occupational safety and health laws. We believe we have complied in all material respects with regard to governmental regulations applicable to us. However, we may have to incur significant costs in defending or settling future claims of alleged violations of governmental

regulations and these regulations may materially restrict or impede our operations in the future. In addition, our efforts to comply with or contest any regulatory actions may distract personnel or divert resources from other more important initiatives.

The manufacture and use of certain products that contain our nanocrystalline materials are subject to intense governmental regulation, including regulations promulgated by the U.S. Food and Drug Administration, the U.S. Environmental Protection Agency, and the U.S. Occupational Safety and Health Administration. As a result, we are required to adhere to the requirements of the regulations of governmental authorities in the United States and other countries. These regulations could increase our cost of doing business and may render some potential markets prohibitively expensive.

We have implemented anti-takeover provisions which could discourage or prevent a takeover, even if an acquisition could be beneficial to our stockholders.

In October 1998, we entered into a Rights Agreement, commonly referred to as a "poison pill." The provisions of this agreement and some of the provisions of our certificate of incorporation, our bylaws and Delaware law could, together or separately:

- discourage potential acquisition proposals;
- delay or prevent a change in control; and
- limit the price that investors might be willing to pay in the future for shares of our common stock.

In particular, our board of directors is authorized to issue up to 24,588 shares of preferred stock (less any outstanding shares of preferred stock) with rights and privileges that might be senior to our common stock, without the consent of the holders of the common stock, including up to 2,500 shares of Series A Junior Participating Preferred Stock issuable under the 1998 Rights Agreement.

In addition, Section 203 of the Delaware General Corporations Law and the terms of our stock option plans may discourage, delay or prevent a change in control of our company.

Future sales of our common stock by existing stockholders could negatively affect the market price of our stock and make it more difficult for us to sell stock in the future.

Sales of our common stock in the public market, or the perception that such sales could occur, could result in a decline in the market price of our common stock and make it more difficult for us to complete future equity financings. A substantial number of shares of our common stock and shares of common stock subject to outstanding warrants and options may be resold pursuant to currently effective registration statements. As of March 26, 2004, there are:

- 15,662,532 shares of common stock that have been issued in registered offerings, upon the exercise of options under our equity incentive plan or in private placements and are freely tradable in the public markets,
- 1,397,404 shares of common stock that may be issued on the exercise of stock options outstanding and exercisable under our equity incentive plan;
- 453,001 shares of common stock (together with a warrant to purchase a like number of shares) that were issued pursuant to the Company's September 8, 2003 private placement and may be registered for resale pursuant the terms of the Registration Rights Agreement executed in connection with this private placement; and

- 1,256,281 shares of common stock that were issued pursuant to the Company's March 23, 2004 private placement and may be registered for resale after March 23, 2006 pursuant the terms of the Registration Rights Agreement executed in connection with this private placement.

We cannot estimate the number of shares of common stock that may actually be resold in the public market because this will depend on the market price for our common stock, the individual circumstances of the sellers, and other factors. If stockholders sell large portions of their holdings in a relatively short time, for liquidity or other reasons, the market price of our common stock could decline significantly.

Bradford T. Whitmore has significant influence on all matters requiring stockholder approval because he beneficially owns a large percentage of our common stock, and he may vote the common stock in ways with which our other stockholders disagree.

As of March 30, 2004, Bradford T. Whitmore, together with his affiliates, Grace Brothers, Ltd. and Grace Investments, Ltd., beneficially owned approximately 25% of the outstanding shares of our common stock. As a result, he has significant influence on matters submitted to our stockholders for approval, including proposals regarding:

- any merger, consolidation or sale of all or substantially all of our assets;
- the election of members of our board of directors; and
- any amendment to our certificate of incorporation.

The ownership position of Mr. Whitmore could delay, deter or prevent a change of control or adversely affect the price that investors might be willing to pay in the future for shares of our common stock. Mr. Whitmore's interests may be significantly different from the interests of our other stockholders and he may vote the common stock he beneficially owns in ways with which our other stockholders disagree. Investors in the Company should also note that R. Janet Whitmore, one of our directors, is the sister of Mr. Whitmore.

We have been involved in litigation. If we are involved in similar litigation in the future, the expense of defending such litigation and the potential costs of judgments against us and the costs of maintaining insurance coverage could have a material adverse effect on our financial performance.

We have been involved in three securities class action lawsuits, one of which was a consolidation of several related lawsuits. While all of these lawsuits have been settled and dismissed with all settlements funded by our directors and officers liability insurance, we may be the target of additional securities lawsuits in the future. If we are involved in similar litigation in the future, the expense of defending such litigation, the potential costs of judgments against us, the costs of maintaining insurance coverage and the diversion of management's attention could have a material adverse effect on our financial performance.

Our stock price is volatile.

The stock markets in general, and the stock prices of technology-based companies in particular, have experienced extreme volatility that often has been unrelated to the operating performance of any specific public company. The market price of our common stock has fluctuated in the past and is likely to fluctuate in the future as well. Our future financial performance and stock price may be subject to significant volatility, particularly on a quarterly basis. Shortfalls in our revenues in any given period relative to the levels expected by investors could immediately, significantly and adversely affect the trading price of our common stock.

Dilutive Effect of Private Placements.

On May 29, 2002 we sold 1,370,000 shares of our common stock to selected accredited investors at a purchase price of $5.00 per share. On May 29, 2002 the closing sale price of our common stock, as reported on NASDAQ, was $5.15 per share. On September 8, 2003 we sold 453,001 shares of our common stock to Grace Brothers, Ltd. at a purchase price of $4.415 per share together with a warrant to purchase a like number of shares of common stock during the next twelve months also at a price of $4.415 per share. The share price for the common stock was determined based on the fifteen-day market closing average for the Company's stock ending September 5, 2003. On September 8, 2003 the closing sale price of our common stock as reported on NASDAQ, was $5.50 per share. On March 23, 2004 we sold 1,256,281 shares of our common stock to Altana at a purchase price of $7.96 per share. On March 23, 2004 the closing sale price of our common stock, as reported on NASDAQ, was $8.26 per share. Each of these issuances of stock at below the then-current market price had a dilutive effect on existing common stockholders.

We have never paid dividends.

We currently intend to retain earnings, if any, to support our growth strategy. We do not anticipate paying dividends on our stock in the foreseeable future.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

The Company does not have any material market risk sensitive instruments.

Item 8. Financial Statements and Supplementary Data

The financial statements and financial statement schedule, 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

Not applicable.

Item 9A. Controls and Procedures

As of the end of the period covered by this report, the Company conducted an evaluation, under the supervision and with the participation of the principle executive officer and principle financial officer, 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 (the "Exchange Act"). Based on this evaluation, the principle executive officer and principle financial officer concluded that the Company's disclosure controls and procedures are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms. There was no change

in the Company’s internal control over financial reporting during the Company’s most recently completed fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting.

PART III

Item 10. Directors and Executive Officers of the Registrant

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	69	Director	2001	2004	I
James A. McClung, Ph.D.	66	Director	2000	2004	I
R. Janet Whitmore	49	Director	2003	2004	I
Joseph E. Cross	56	Director, President and Chief Executive Officer	1998	2005	II
Richard W. Siegel, Ph.D.	66	Director	1989	2005	II
Donald S. Perkins	76	Chairman of the Board of Directors	1998	2006	III
Jerry K. Pearlman	64	Director	1999	2006	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 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 currently serves as Chairman of the Board of The Culver Education Foundation, member of the Board of Directors of International Paper, Rohm and Haas Company, Ryerson Tull, Inc., SBC Communications, Inc. and is a member of the Washington, D.C. Business Council.

Mr. McClung has served as a director of the Company since February 2000. He is currently Vice Chairman of Charter Consulting and former Senior Vice President and executive officer for FMC Corporation, 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), Beaulieu of America Corporation, NCCI Holdings, Turtle Wax 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 of Foreign Relations and the Economic Club of Chicago. He serves as a board director at Illinois Institute of Technology, Thunderbird: The Garvin School of International 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.

Ms. Whitmore joined the board in November 2003. She is currently a director of Silverleaf Resorts, Inc., where she serves as Chairman of the Compensation Committee and as a member of the Audit Committee. She is also a director of Epoch Biosciences (EPIO). 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 Bachelor of Science degree in Chemical Engineering from Purdue University and an M.B.A. from Lewis University.

Mr. Cross has served as Chief Executive Officer of the Company since December 1998 and President and a director of the Company since joining the Company in November 1998. Prior to joining the Company in November 1998, Mr. Cross served as President and Chief Executive Officer of Aptech, a manufacturer of measurement, metering and control devices for the utility industry, from August 1996 to October 1998. From December 1993 to July 1996, Mr. Cross served as President of Aegis Technologies, an interactive telecommunications company. He holds a B.S. degree from Southwest Missouri University and attended the M.B.A. program at Southwest Missouri University.

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 nanocrystalline materials. Dr. Siegel is an internationally recognized scientist in the field of nanocrystalline materials. 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. 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 currently serves on the Nanotechnology Technical Advisory Group to the U.S. President's Council of Advisors on Science and Technology. 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

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, three Jones Lang LaSalle REITs and several start-up companies. 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 is Honorary Chairman of the Illinois Coalition and 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, a Director of Leadership for Quality Education and a member of RoundTable Healthcare Partners L.P. Advisory Boards. Mr. Perkins holds a B.A. degree from Yale University and an M.B.A. degree from the Harvard Graduate School of Business Administration.

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 a director of Smurfit Stone Container Corporation and Ryerson-Tull, Inc. He is a trustee of Northwestern University and a 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.

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 fair market value of the common stock, as determined by a committee appointed by the Board of Directors, as of the date of issuance of such stock options. This initial option grant to Nanophase's directors vests over five years. On or after the date of each annual meeting of the stockholders of the Company, each Outside Director who is re-elected or continues to serve as a director because his or her term has not expired is typically granted stock options to purchase 2,000 shares of common stock provided that such grant is typically not made to an Outside Director who was first elected to the Board of Directors within three months prior to such annual meeting. The options granted annually to Outside Directors vest in three equal annual installments beginning on the first anniversary of the date of grant. All options granted to Outside Directors expire ten years from the date of grant. In January 2004, in addition to the option grants referenced above, the Company paid $6,250 as quarterly compensation, which will amount to an annual total of $25,000 per director for services performed in their capacity as directors. Prior to 2004, the Company paid directors with a combination of common stock grants and cash as outlined below. Given changes in securities laws, the Company did not grant any common stock to its directors in 2004. Under the pre-2004 compensation model, the annual compensation paid to each outside director had a value of approximately $25,000. Beginning in 2004, Mr. McClung's cash compensation is being paid to Lismore International, Incorporated.

Effective January 17, 2003, the Company granted 4,870 restricted shares of common stock to each of Donald Perkins, Richard Siegel, Jerry Pearlman, James McClung, and James Henderson. The Company also agreed to issue a cash payment of $10,000 to reimburse these Directors for personal income tax liabilities relating to this grant of common stock. In addition, the Company entered into a consulting agreement in March 2001 with Richard Siegel, Ph.D. pursuant to which the Company paid Dr. Siegel $2,000 per month for consulting services over a twelve-month term. This agreement expired in July 2002.

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

Meetings of the Board and Committees — During the year ended December 31, 2003, the Board of Directors held seven formal meetings. Four of the Company's current directors attended 100% of the total board and committee meetings held during 2003 (this includes Ms. Whitmore, who attended the one meeting during the period in 2003 during which she was a director) and no director attended less than 75% of the aggregate number of board and committee (for all committees on which a particular director served) meetings held during 2003.

Committees of the Board of Directors — The Board of Directors has established an Audit and Finance Committee and a Compensation and Governance 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. Henderson, Mr. Pearlman and Mr. Perkins. The members of the Compensation and Governance Committee are Mr. Pearlman (Chairman), Mr. Henderson and Mr. Perkins. The Company does not have a standing nominating committee.

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 seven formal meetings in 2003. The Board of Directors has determined that Mr. Pearlman, Mr. Perkins, and Mr. Henderson, all of whom serve on the Audit and Finance Committee, 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 recommending to the Board of Directors guidelines and standards relating to the determination of executive and key employee compensation, reviewing 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 2001 Equity Compensation Plan, determining the number of options, if any, to be granted to the Company's employees and consultants pursuant to the 2001 Equity Compensation Plan and reporting to the Board of Directors regarding the foregoing. The Compensation and Governance Committee held four formal meetings in 2003.

EXECUTIVE OFFICERS

Set forth below is certain information regarding the executive officers of the Company who are not identified above as directors.

Name	Age	Position
Jess Jankowski	38	Acting Chief Financial Officer, Vice President, Corporate Controller, Secretary and Treasurer
Robert Haines	53	Vice President — Operations
Daniel S. Bilicki	60	Vice President — Sales and Marketing
Richard W. Brotzman, Ph.D.	50	Vice President — Research and Development

Mr. Jankowski has served as Controller of the Company since joining in 1995. He was elected Secretary and Treasurer in November 1999, Acting Chief Financial Officer in January 2000 and Vice President in April of 2002. From 1990-1995 he served as Controller for two building contractors in the Chicago area. 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. in accountancy from Northern Illinois University, an M.B.A. from Loyola University, and received his certified public accountant certificate from the State of Illinois.

Mr. Haines joined Nanophase Technologies in January 2001 as Vice President of Operations. Beginning in 1996 and prior to joining Nanophase, he served as Corporate Director of Quality at Legrand North America. Previous experience includes two years as Vice President of Operations for Aegis Technologies and eight years with Digital Equipment Corporation. Mr. Haines has a B.S. in Chemistry/Engineering Physics from East Tennessee State University.

Mr. Bilicki has served as Vice President — Sales and Marketing of the Company since joining the Company in March 1999. From January 1996 until March 1999, Mr. Bilicki served as President/Director of PT Crosfield Indonesia in Jakarta, Indonesia, a subsidiary of Crosfield Company, which is a global chemical company. From January 1994 to December 1995, Mr. Bilicki held the position of President/Director North America of Crosfield Company. He holds a B.S. degree from Indiana Institute of Technology and an M.B.A. degree from Winthrop University.

Dr. Brotzman joined the Company in July 1994 as a senior scientist and has served as Vice President — Research and Development of the Company since July 1996. He is the inventor of much of the Company's coating technology. Dr. Brotzman has 15 years experience in research and development of advanced materials leading to new products. His technical areas of expertise include interfacial adhesion and chemistry, self-assembled polymeric coatings, nanosized inorganic powders, powder processing, reactive coupling agents, solgel derived protective coatings, non-destructive evaluation of

composites, neo-debye relaxation in green inorganic gels, asymmetric membranes and plasma processing. From January 1991 to July 1994, Dr. Brotzman served as Director of Research at TPL, Inc., an advanced materials company. He holds a B.S. degree in chemical engineering from Lafayette College, an M.S. degree in engineering and applied science from the University of California, Davis and a Ph.D. in chemistry from the University of Washington.

The Board of Directors elects executive officers annually and such executive officers, subject to the terms of certain employment agreements, serve at the discretion of the Board of Directors. Messrs. Cross, Jankowski, Bilicki, Haines and Dr. Brotzman 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 2003, except to the extent described below, all Section 16 filing requirements applicable to its officers, directors and 10% beneficial owners were complied with by such persons. One such form (SEC Form 4) was filed on behalf of Dr. Richard Brotzman on the third business day after a transaction (one day later than required) due to an administrative error.

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. A copy of the Code of Ethics is posted on its Internet web site 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.

Item 11. Executive Compensation

EXECUTIVE COMPENSATION

The following table provides information concerning the annual and long-term compensation for services in all capacities to the Company for the years ended December 31, 2003, 2002, and 2001 of those persons who were (1) during 2003, the chief executive officer of the Company and (2) at December 31, 2003, the four other most highly compensated (based upon combined salary and bonus) executive officers of the Company whose total salary and bonus exceeded $100,000 during 2003 (collectively, the "Named Officers").

SUMMARY COMPENSATION TABLE

		Annual Compensation			Long-Term Compensation Awards Securities Underlying Options	All Other Compensation($)
Name and Principal Position	Year	Salary($)	Bonus($)	Other Annual Compensation($)		
Joseph E. Cross	2003	$ 298,766	$ 0	$ 0	50,000	$ 0
President and Chief Executive Officer	2002	268,234	0	0	55,000	0
	2001	261,922	74,025	17,727(1)	100,000	0
Daniel S. Bilicki	2003	$ 207,786	$ 0	$ 0	21,000	$ 0
Vice President Sales and Marketing	2002	195,036	0	0	30,000	0
	2001	190,812	46,620	0	60,000	0
Robert Haines (2)	2003	$ 187,712	$ 0	$ 0	30,000	$ 0
Vice President Operations	2002	169,255	20,000	0	40,000	113,047(3)
	2001	147,692	0	55,506(4)	30,000	63,454(5)
Richard Brotzman, Ph.D.	2003	$ 172,840	$ 0	$ 0	20,000	$ 0
Vice President Research and Development	2002	155,914	10,000	0	20,000	0
	2001	145,760	16,800	0	40,000	0
Jess Jankowski	2003	$ 134,355	$ 0	$ 0	18,000	$ 0
Acting Chief Financial Officer,	2002	119,069	10,000	0	20,000	0
Vice President, Corporate	2001	108,981	13,230	0	13,000	0
Controller, Secretary and Treasurer						

(1) Represents payment of personal income tax liabilities associated with relocation expenses received.
(2) Mr. Haines's employment commenced with the Company on January 22, 2001.
(3) Represents relocation expenses incurred by Mr. Haines for moving to the greater Chicago metropolitan area.
(4) Includes $24,793 paid for lodging in Romeoville, Illinois, $20,930 paid for airfare to and from Chicago, Illinois, and $9,783 in payments related to use of a car. These expenses were incurred through 2001. All amounts have been "grossed-up" to compensate Mr. Haines for personal income tax liabilities associated with the reimbursement of these expenses.
(5) Represents relocation expenses incurred by Mr. Haines for moving to the greater Chicago metropolitan area.

OPTION GRANTS IN 2003 — The following table provides information on grants of stock options to the Named Officers during 2003. No stock appreciation rights were granted to the Named Officers during 2003.

	Individual Grants					
					Potential Realizable Value at Assumed Annual Rates of Stock Price Appreciation For Option Term (2)	
Name	Number of Securities Underlying Options Granted (#) (1)	Percent of Total Options Granted to Employees in Fiscal Year	Exercise or Base Price ($/SH)	Expiration Date	5%($)	10%($)
Joseph E. Cross	50,000	20.51%	$ 3.66	03/24/13	$ 115,088	$ 291,655
Robert Haines	30,000	12.31%	3.66	03/24/13	69,053	174,993
Daniel S. Bilicki	21,000	8.61%	3.66	03/24/13	48,337	122,495
Richard Brotzman, Ph.D.	20,000	8.20%	3.66	03/24/13	46,035	116,662
Jess Jankowski	18,000	7.38%	3.66	03/24/13	41,432	104,996

(1) These options are all non-qualified stock options. Subject to certain restrictions, these options become exercisable in three equal annual installments, beginning on the first anniversary of the date of grant. These options were granted on March 24, 2003.

(2) Potential realizable value is presented net of the option exercise price but before any federal or state income taxes associated with exercise. These amounts represent certain assumed rates of appreciation only, as mandated by the SEC. Actual gains will be dependent on the future performance of the common stock and the option holder's continued employment through the vesting period. The amounts reflected in the table may not necessarily be realized.

AGGREGATED OPTION EXERCISES IN 2003 AND YEAR-END 2003 OPTION VALUES – The following table provides information regarding each of the Named Officers' option exercises in 2003 and unexercised options at December 31, 2003.

Aggregated Option Exercises in 2003 and Year-End 2003 Option Values

			Number of Securities Underlying Unexercised Options at Year-End 2003 (#)		Value of Unexercised In-The-Money Options at Year-End 2003 ($) (1)	
Name	Shares Acquired On Exercise (#)	Value Realized($)	Exercisable	Unexercisable	Exercisable	Unexercisable
Joseph E. Cross	0	$ 0	374,998	130,002	$ 1,169,250	$ 350,450
Robert Haines	0	0	25,334	74,666	19,201	171,299
Daniel S. Bilicki	90,000	279,003	99,999	71,001	55,075	189,255
Richard Brotzman, Ph.D.	76,065	380,608	165,018	64,662	530,928	190,301
Jess Jankowski	0	0	60,465	42,490	100,935	113,856

(1) The value per option is calculated by subtracting the exercise price per option from the closing price of the common stock on the Nasdaq National Market on December 31, 2003, which was $8.09.

Employment

The Company entered into an employment agreement with Joseph E. Cross dated November 9, 1999 which provides for an annual base salary of not less than $220,000. In addition, Mr. Cross received

a lump sum payment of $50,000 on the first anniversary of the commencement of this agreement. The Company also granted to Mr. Cross options to purchase up to 100,000 shares of common stock at an exercise price of $2.9375 per share and options to purchase up to 50,000 shares of common stock at an exercise price of $2.1875, with options for one-fifth of such shares becoming exercisable on each of the first five anniversaries of the dates of grant. No term has been assigned to Mr. Cross' employment agreement. If Mr. Cross is terminated other than for "cause" (as such term is defined in Mr. Cross' employment agreement), Mr. Cross will receive severance benefits in an amount equal to Mr. Cross' base salary for 52 weeks.

Effective as of November 2, 2000, the Company also entered into an employment agreement with Robert Haines providing for an annual base salary of not less than $160,000. The Company also granted to Mr. Haines options to purchase up to 30,000 shares of common stock at an exercise price of $10.1875. No term has been assigned to Mr. Haines employment agreement. If Mr. Haines is terminated other than for "cause" (as such term is defined in Mr. Haines's employment agreement), Mr. Haines will receive severance benefits in an amount equal to Mr. Haines's base salary for 52 weeks.

Effective as of February 17, 2000, the Company also entered into an employment agreement with Daniel Bilicki providing for an annual base salary of not less than $165,000. In addition, Mr. Bilicki was granted options to purchase up to 50,000 shares of common stock at an exercise price of $2.375. No term has been assigned to Mr. Bilicki's employment agreement. If Mr. Bilicki is terminated other than for "cause" (as such term is defined in Mr. Bilicki's employment agreement), Mr. Bilicki will receive severance benefits in an amount equal to Mr. Bilicki's base salary for 52 weeks.

Effective as of September 26, 2001, the Company also entered into an employment agreement with Dr. Richard Brotzman providing for an annual base salary of not less than $146,250. No term has been assigned to Dr. Brotzman's employment agreement. If Dr. Brotzman is terminated other than for "cause" (as such term is defined in Dr. Brotzman's employment agreement), Dr. Brotzman will receive severance benefits in an amount equal to Dr. Brotzman's base salary for 26 weeks.

Effective as of February 17, 2000 the Company also entered into an employment agreement with Mr. Jess Jankowski providing for an annual base salary of not less than $95,000. No term has been assigned to Mr. Jankowski's employment agreement. If Mr. Jankowski's is terminated other than for "cause" (as such term is defined in Mr. Jankowski's employment agreement), Mr. Jankowski's will receive severance benefits in an amount equal to Mr. Jankowski's base salary for 26 weeks.

Item 12. Security Ownership of Certain Beneficial Owners and Management

SECURITY OWNERSHIP OF MANAGEMENT AND PRINCIPAL STOCKHOLDERS

The following table sets forth, as of March 30, 2004 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 Named Officers and (4) all Company executive officers and directors as a group.

Name	Number of Shares Beneficially Owned (1)	Percent of Shares Beneficially Owned
Spurgeon Corporation	4,054,945(2)	22.7%
Bradford T. Whitmore	4,527,757(3)	25.4%
Grace Brothers, Ltd.	2,985,195(4)	16.7%
Grace Investments, Ltd.	1,069,750(5)	6.1%
Altana Chemie, AG	1,256,281(6)	7.2%
Joseph E. Cross	454,834(7)	2.5%
James A. Henderson	15,742(8)	*
Richard W. Siegel, Ph.D.	281,044(9)	1.6%
James McClung	42,770(10)	*
Jerry Pearlman	35,947(11)	*
Donald S. Perkins	74,811(12)	*
R. Janet Whitmore	147,816(13)	*
Daniel S. Bilicki	152,000(14)	*
Jess Jankowski	83,100(15)	*
Richard W. Brotzman, Ph.D.	191,686(16)	1.0%
Robert Haines	54,667(17)	*
All executive officers and directors as a group (11 persons)	1,534,417(18)	8.3%

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 2,532,194 shares of common stock held by Grace Brothers, Ltd. and 1,069,750 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 amount also includes 453,001 shares of common stock issuable upon exercise of warrants that are held by Grace Brothers, Ltd and are exercisable currently. This information is based on information reported on Form 4 filed on September 10, 2003 with the Commission by Spurgeon Corporation. The address of the stockholder is 1560 Sherman Avenue, Suite 900, Evanston, Illinois 60201.

(3) Includes 2,532,194 shares of common stock held by Grace Brothers, Ltd., 1,069,750 shares of common stock held by Grace Investments, Ltd. and 472,812 shares held by Bradford T. Whitmore. This amount also includes 453,001 shares of common stock issuable upon exercise of warrants that are held by Grace Brothers, Ltd and are exercisable currently. Mr. Whitmore is a general partner of Grace Brothers, Ltd. and is the sole owner of an entity which is a general

partner of Grace Investments, Ltd. 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 September 10, 2003 with the Commission by Mr. Whitmore. The address of the stockholder is 1560 Sherman Avenue, Suite 900, Evanston, Illinois 60201.

(4) This amount includes 453,001 shares of common stock issuable upon exercise of warrants that are exercisable currently. This information is based on information reported on Form 4's filed on September 10, 2003 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) This information is based on information reported on Form 4's filed on September 10, 2003 with the Commission by Spurgeon Corporation and Bradford T. Whitmore. The address of the stockholder is 1560 Sherman Avenue, Suite 900, Evanston, Illinois 60201.

(6) Consist of unregistered common stock, and therefore not freely saleable, until March 23, 2006.

(7) Includes 453,334 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(8) Includes 7,332 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(9) Includes 66,042 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(10) Includes 13,999 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(11) Includes 13,999 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(12) Includes 32,667 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 31, 2004.

(13) This information is based on information reported on a Form 4 filed on November 25, 2003 with the Commission by R. Janet Whitmore. The address of the stockholder is 10305 Oaklyn Drive, Potomac, Maryland 20854.

(14) Includes 147,000 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(15) Includes 81,800 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(16) Consists of 191,686 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(17) Consists of 54,667 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

(18) Includes 1,062,526 shares of common stock issuable upon exercise of options exercisable currently or within 60 days of March 30, 2004.

Equity Compensation Plan Information

The following table gives information about our common stock that may be issued upon the exercise of options, warrants, and rights under all of our existing compensation plans as of December 31, 2003, including the 1992 Amended and Restated Stock Option Plan and the 2001 Equity Compensation Plan.

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	(b) Weighted Average Exercise Price of Outstanding Options, Warrants, and Rights	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))	(d) Total of Securities Reflected in Columns (a) and (c)
Plans Approved by Shareholders	1,928,619(1)	$ 5.70	359,500(2)	2,288,119
Plans Not Approved by Shareholders	None	$ —	None	—

(1) Consists of the 1992 Amended and Restated Stock Option Plan, the 2001 Equity Compensation Plan, and shares of authorized but unissued Preferred Stock
(2) Consists of shares available for future issuance under the 2001 Equity Compensation Plan.

Item 13. Certain Relationships and Related Transactions

See Item 11 above. In addition, on September 5, 2003, in anticipation of the September 8, 2003 private placement to Grace Brothers Ltd. discussed below, the Company amended its existing 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 such amendment, the beneficial ownership threshold was 25%. On September 8, 2003, the Company issued 453,001 shares of its common stock to Grace Brothers Ltd. at a purchase price of $4.415 per share together with a warrant to purchase a like number of shares of common stock during the next twelve months also at a price of $4.415 per share. The share price for the common stock was determined based on the fifteen-day market closing average for the Company’s stock ending September 5, 2003. Grace Brothers, Ltd. beneficially owns approximately 18.5% of the Company’s outstanding common stock. Ms. R. Janet Whitmore is a sister of Bradford Whitmore who serves as the general partner of Grace Brothers, Ltd.

On March 23, 2004, the Company entered into a joint development agreement with Altana described in “Item 1. Business—Marketing.” In connection with this agreement the Company sold, in a private placement to Altana, 1,256,281 shares of common stock at $7.96 per share and received gross proceeds of $10 million. Altana beneficially owns approximately 7% of the Company’s outstanding common stock.

Item 14. Principal Accountant Fees and Services

Audit Fees. The aggregate amount billed by our principal accountant, McGladrey & Pullen, LLP, for audit services performed during the fiscal years ended December 31, 2003 and 2002 was $126,450 and $75,575, respectively. Audit services include the auditing of financial statements, quarterly reviews, statutory audits and the preparation of consents and review of registration statements.

Audit Related Fees. McGladrey & Pullen, LLP did not perform audit related services during the fiscal years ended December 31, 2003 and 2002. Audit related services would include employee benefit plan audits, due diligence assistance, internal control review assistance and audit or attestation services not required by statute or regulation.

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, 2003 and 2002 were $6,100 and $7,725, respectively. These services include tax related research and general tax services in connection with transactions and legislation.

All Other. Other than those fees described above, there were no other fees billed for services performed by McGladrey & Pullen, LLP during the fiscal years ended December 31, 2003 and December 31, 2002.

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 and Vice Chairman of the audit committee. In the event the Chairman or Vice Chairman exercise such delegated authority, they 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 auditors, are filed as part of this Form 10-K:

   Report of McGladrey & Pullen, LLP, Independent Auditors

   Balance Sheets as of December 31, 2003 and 2002

   Statements of Operations for the Years Ended December 31, 2003, 2002 and 2001

   Statements of Stockholders' Equity for the Years Ended December 31, 2003, 2002 and 2001

   Statements of Cash Flows for the Years Ended December 31, 2003, 2002 and 2001

   Notes to Financial Statements

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

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").
3.1	Certificate of Incorporation of the Company, incorporated by reference to Exhibit 3.1 to the 1997 10-K.
3.2	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.
4.10	Stock Purchase Agreement dated March 23, 2004 between the Company and Altana Chemie AG.
4.11	Registration Rights Agreement dated March 23, 2004 between the Company and Altana Chemie AG.
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.
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*	Employment Agreement dated as of November 9, 1999 between the Company and Joseph Cross, incorporated by reference to Exhibit 10.15 to the 1999 10-K.
10.14*	Employment Agreement dated as of March 15, 1999 between the Company and Daniel S. Bilicki, incorporated by reference to Exhibit 10.19 to the 1998 10-K.
10.15*	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).
10.16**	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.
10.17*	Employment Agreement dated as of November 2, 2000 between the Company and Robert Haines, incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K for the year ended December 31, 2000 (the "2000 10-K").
10.18	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.
10.19**	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.
10.20	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.
10.21**	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.
10.22*	Consulting Agreement dated December 12, 2002 between the Company and Dr. Gina Kritchevsky, incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K for the year ended December 31, 2002.
10.23	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.
10.24	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.

10.25*	Employment Agreement dated March 24, 2003 between the Company and Mr. Edward G. Ludwig, Jr., incorporated by reference to Exhibit 10.25 to the Company's Annual Report on Form 10-K for the year ended December 31, 2002.
10.26*	Employment Agreement dated February 17, 2000 between the Company and Mr. Jess Jankowski.
10.27*	Employment Agreement dated September 26, 2001 between the Company and Dr. Richard W. Brotzman.
10.28***	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.).
10.29	Joint Development Agreement dated March 23, 2004 between the Company and Altana Chemie AG.
23.1	Consent of McGladrey & Pullen, LLP.
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

* Management contract or compensatory plan or arrangement.
** Confidentiality previously granted for portions of this agreement.
*** Confidentially requested, confidential portions have been omitted and filed separately with the Commission as required by Rule 24b-2.

(b) Reports on Form 8-K:

On November 7, 2003, the Company furnished a Current Report on Form 8-K to report under Item 12 that on November 6, 2003 it issued a press release announcing third quarter 2003 revenues.

NANOPHASE TECHNOLOGIES CORPORATION

INDEX TO FINANCIAL STATEMENTS

Report of Independent Auditors

The Board of Directors and Stockholders
Nanophase Technologies Corporation

We have audited the accompanying balance sheets of Nanophase Technologies Corporation as of December 31, 2003 and 2002, and the related statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2003. 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 auditing standards generally accepted in the United States of America. 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 at December 31, 2003 and 2002, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2003, in conformity with accounting principles generally accepted in the United States of America.

/s/ McGladrey & Pullen, LLP

McGladrey & Pullen, LLP

Schaumburg, Illinois
January 23, 2004, except for Note 20, as to
which the date is March 23, 2004

NANOPHASE TECHNOLOGIES CORPORATION

BALANCE SHEETS

	As of December 31,	
	2003	2002
ASSETS		
Current assets:		
Cash and cash equivalents	$ 399,999	$ 445,684
Investments	4,562,364	7,062,808
Trade accounts receivable, less allowance for doubtful accounts of $25,000 in 2003 and 2002, respectively	1,244,490	941,335
Other receivable, net	24,214	16,790
Inventories, net	682,999	981,834
Prepaid expenses and other current assets	659,778	747,042
Total current assets	7,573,844	10,195,493
Equipment and leasehold improvements, net	8,192,995	9,433,237
Other assets, net	475,980	384,240
	$ 16,242,819	$ 20,012,970
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	$ 1,034,379	$ 1,283,554
Current portion of capital lease obligations	43,609	62,099
Accounts payable	438,304	480,789
Accrued expenses	743,771	989,000
Total current liabilities	2,260,063	2,815,442
Long-term debt, less current maturities	251,843	309,128
Long-term portion of capital lease obligations, less current maturities	11,826	55,435
	263,669	364,563
Contingent liabilities:	—	—
Stockholders' equity:		
Preferred stock, $.01 par value; 24,088 authorized and no shares issued and outstanding	—	—
Common stock, $.01 par value; 25,000,000 shares authorized; 15,902,674 and 15,137,877 shares issued and outstanding at December 31, 2003 and December 31, 2002, respectively	159,027	151,379
Additional paid-in capital	59,297,135	56,658,080
Deferred stock compensation	—	(67,069)
Accumulated deficit	(45,737,075)	(39,909,425)
Total stockholders' equity	13,719,087	16,832,965
	$ 16,242,819	$ 20,012,970

(See accompanying Notes to Financial Statements)

NANOPHASE TECHNOLOGIES CORPORATION

STATEMENTS OF OPERATIONS

	Years ended December 31,		
	2003	**2002**	**2001**
Revenue:			
Product revenue	$ 4,880,313	$ 5,002,986	$ 3,650,914
Other revenue	566,348	398,229	404,574
Total revenue	5,446,661	5,401,215	4,055,488
Operating expense:			
Cost of revenue	5,205,065	5,095,019	4,906,716
Research and development expense	1,906,791	1,572,997	1,601,671
Selling, general and administrative expense	4,095,877	3,854,051	3,798,543
Total operating expenses	11,207,733	10,522,067	10,306,930
Loss from operations	(5,761,072)	(5,120,852)	(6,251,442)
Interest income	67,992	152,626	585,782
Interest expense	(109,889)	(125,181)	(33,485)
Other, net	5,319	6,844	(11,098)
Loss before provision for income taxes	(5,797,650)	(5,086,563)	(5,710,243)
Provision for income taxes	(30,000)	(68,674)	(30,000)
Net loss	$ (5,827,650)	$ (5,155,237)	$ (5,740,243)
Net loss net per share-basic and diluted	$ (0.38)	$ (0.35)	$ (0.42)
Weighted average number of common shares outstanding	15,391,537	14,551,479	13,667,062

(See accompanying Notes to Financial Statements)

NANOPHASE TECHNOLOGIES CORPORATION

STATEMENTS OF STOCKHOLDERS' EQUITY

Description	Preferred Stock Shares	Preferred Stock Amount	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Deferred Stock Compensation	Accumulated Deficit	Total
Balance as of January 1, 2001	—	$ —	13,593,914	$ 135,939	$ 49,885,751	$ —	$ (29,013,945)	$ 21,007,745
Exercise of stock options	—	—	105,212	1,052	302,761		—	303,813
Stock compensation	—	—	6,805	68	72,235		—	72,303
Net loss for the year ended December 31, 2001	—	—	—	—	—	—	(5,740,243)	(5,740,243)
Balance as of December 31, 2001	—	—	13,705,931	137,059	50,260,747	—	(34,754,188)	15,643,618
Exercise of stock options	—	—	20,296	203	44,346		—	44,549
Exercise of warrants			28,950	290	32,221			32,511
Stock compensation	—	—	12,700	127	82,423		—	82,550
Common stock offering			1,370,000	13,700	6,158,593			6,172,293
Deferred stock compensation					79,750	(79,750)		—
Amortization of deferred stock compensation						12,681		12,681
Net loss for the year ended December 31, 2002	—	—	—	—	—	—	(5,155,237)	(5,155,237)
Balance as of December 31, 2002	—	—	15,137,877	151,379	56,658,080	(67,069)	(39,909,425)	16,832,965
Exercise of stock options	—	—	287,446	2,874	594,595		—	597,469
Stock compensation	—	—	24,350	244	74,024	—	—	74,268
Common stock offering	—	—	453,001	4,530	1,970,436	—	—	1,974,966
Deferred stock compensation	—	—						—
Amortization of deferred stock compensation						67,069		67,069
Net loss for the year ended December 31, 2003	—	—	—	—	—	—	(5,827,650)	(5,827,650)
Balance as of December 31, 2003	—	$ —	15,902,674	$ 159,027	$ 59,297,135	$ —	$ (45,737,075)	$ 13,719,087

(See accompanying Notes to Financial Statements)

NANOPHASE TECHNOLOGIES CORPORATION

STATEMENTS OF CASH FLOWS

	Years ended December 31,		
	2003	**2002**	**2001**
Operating activities:			
Net loss	$ (5,827,650)	$ (5,155,237)	$ (5,740,243)
Adjustments to reconcile net loss to cash used in operating activities:			
Depreciation and amortization	1,521,353	1,237,818	714,276
Amortization of deferred stock compensation	67,069	12,681	—
Stock compensation expense	74,268	82,550	72,303
Allowance for excess inventory quantities	(46,084)	26,262	539,415
Loss on disposition of equipment	—	5,138	84,388
Patent write-off	19,727	—	—
Changes in assets and liabilities related to operations:			
Trade accounts receivable	(497,923)	(71,243)	125,382
Other receivable	(7,424)	50,659	77,369
Inventories	344,919	(51,828)	(603,009)
Prepaid expenses and other assets	87,161	(365,345)	140,998
Accounts payable	157,877	(119,215)	(424,696)
Accrued expenses	(339,386)	256,573	(152,353)
Net cash used in operating activities	(4,446,093)	(4,091,187)	(5,166,170)
Investing activities:			
Acquisition of patents	(77,707)	(72,957)	(125,692)
Acquisition of equipment and leasehold improvements	(220,611)	(1,483,808)	(5,465,697)
Proceeds from disposal of equipment	—	2,188	—
Payment of accounts payable incurred for the purchase of equipment and leasehold improvements	(200,362)	(833,824)	—
Purchases of held-to-maturity investments	(49,063,331)	(108,375,116)	(84,880,519)
Maturities of held-to-maturity investments	51,563,775	108,155,264	94,869,284
Net cash provided by (used in) investing activities	2,001,764	(2,608,253)	4,397,376
Financing activities:			
Principal payment on debt obligations, including capital leases	(603,746)	(281,311)	(320,755)
Proceeds from borrowings	429,955	594,503	643,895
Proceeds from sale of common stock	2,572,435	6,249,353	303,813
Net cash provided by financing activities	2,398,644	6,562,545	626,953
(Decrease) Increase in cash and cash equivalents	(45,685)	(136,895)	109,543
Cash and cash equivalents at beginning of period	445,684	582,579	473,036
Cash and cash equivalents at end of period	$ 399,999	$ 445,684	$ 582,579
Supplemental cash flow information:			
Interest paid	$ 109,889	$ 125,181	$ 33,485
Income taxes paid	$ 30,000	$ 38,674	$ 30,000
Supplemental non-cash investing and financing activities:			
Accounts receivable paid through offset of long- term debt	$ 194,768	$ 242,860	$ —
Capital lease obligations incurred for use of equipment	$ —	$ 65,007	$ 138,437
Accounts payable incurred for the purchase of equipment and leasehold improvements	$ —	$ 200,362	$ 833,824
Accrual related to asset retirement obligation	$ 82,000	$ —	$ —

(See accompanying Notes to Financial Statements)

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS

(1) Description of Business

The Company was incorporated on November 30, 1989, for the purpose of developing nanocrystalline materials for commercial production and sale in domestic and international markets.

Nanophase Technologies is a nanocrystalline materials developer and commercial manufacturer with an integrated family of nanomaterial technologies. Nanophase produces engineered nanomaterials for use in a variety of diverse markets: personal care, sunscreens, abrasion-resistant applications, environmental catalysts, antimicrobial products, and a variety of polishing applications, including semiconductors, hard disk drives, and optics. New markets and applications also are being developed. The Company targets markets in which it feels practical solutions may be found using nanoengineered products. The Company works with leaders in these target markets to identify their material and performance requirements.

The Company also recognizes regular revenue from a technology license and revenue from the occasional sale of production equipment to its technology licensee. Neither of these activities are expected to drive the long-term growth of the business.

Revenue from international sources approximated $755,921, $586,787, and $530,625, for the years ended December 31, 2003, 2002, and 2001, respectively.

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

(2) Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements requires the Company 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. The Company employs corporate "sweep" accounts in order to maximize interest income earned with its operating funds. From time to time, the Company's cash accounts may exceed federally insured limits.

Investments

Investments are classified by the Company at the time of purchase for appropriate designation and such designation is reevaluated as of each balance sheet date. The Company's policy is to classify money market funds and certificates of deposit as investments. Investments are classified as held-to maturity when the Company has the positive intent and ability to hold the securities to maturity. Held-to

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

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. The Company's investments are held by its investment bank who is a member of all major stock exchanges and the Securities Investor Protection Corporation (SIPC). Securities and cash held in custody by the Company's investment bank are afforded unlimited protection through SIPC and a commercial insurer, however, it does not protect against losses from the rise and fall in market value of investments.

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. Management determines 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.

The activity in the Allowance for Doubtful Accounts is as follows:

	2003	2002
Balance, Beginning of year	$25,000	$25,000
Charge offs	—	—
Recoveries	—	—
Provision	—	—
Balance, End of year	$25,000	$25,000

Inventory

Inventory is stated at the lower of cost, maintained on a first in, first out basis, or market. The Company has 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 (1-16 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.

The Company follows the provisions of SFAS No. 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. The Company assesses 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. 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.

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 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.

The Company adopted the provisions of SFAS 143, as of January 1, 2003. At the date of adoption the Company recorded an asset retirement obligation and related asset in the amount of $82,000. The cumulative effect of the change on 2003 and the pro forma amounts for 2002, had the newly adopted method been applied retroactively, have not been presented because the amounts were immaterial to the financial statements. The effect of the implementation of this standard on 2003 resulted in an increase in net loss of $50, 551 (no effect on per common share calculation), comprised of $12,157 in accretion expense and $38,394 in amortization expense.

Activity in the asset retirement obligation account for the year ended December 31, 2003, is as follows:

	2003
Balance, beginning	$ —
Adoption of standard	82,000
Accretion due to passage of time	12,157
Balance, ending	$94,157

Intangibles

Intangible costs are included in other assets and are being amortized over the estimated useful life (17 years) of the respective patents and trademarks using the straight-line method.

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 collectibility is reasonably assured.

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

Other Revenue

Other revenue consists of revenue from research and development arrangements with non-governmental entities, fees from the transfer of technology, and the sale of production equipment that is designed and built by the Company. Such an equipment sale occurred in the first quarter of 2003. These types of equipment sales occur on occasion and are also treated as other revenue. Research and development arrangements include both cost-plus and fixed fee agreements and such revenue is recognized when specific milestones are met under the arrangements. Fees related to the transfer of technology are recognized when the transfer of technology to the acquiring party is completed and the Company has no further significant obligation. Royalties are recognized when earned pursuant to the contractual arrangement. Shipping and handling costs are included in other revenue when products are shipped and included in cost of goods sold when invoiced by the Company's vendor.

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.

Employee Stock Options

During 2003, 287,446 shares of common stock were issued pursuant to option exercises and 24,350 shares of common stock were issued in the form of an annual restricted stock grant to the Company's outside directors, compared to 20,296 and 12,700 shares of common stock respectively, in 2002.

As permitted by Statement of Financial Accounting Standards No. 123 "Accounting for Stock-Based Compensation" (FASB 123), the Company accounts for stock options granted to employees in accordance with APB Opinion No. 25, "Accounting for Stock Issued to Employees" (APB No. 25). As long as the exercise price of the options granted equals the estimated fair value of the underlying stock on the measurement date, no compensation expense is recognized by the Company for these options. FASB 123, established an alternative fair value method of accounting for stock-based compensation plans. As required by FASB 123 for companies using APB No. 25 for financial reporting purposes, the Company makes pro forma disclosures regarding the impact on net loss of using the fair value method of FASB Statement No. 123.

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

Pro forma information regarding net income is required by FASB No. 123, which also requires that the information be determined as if the Company had accounted for the employee stock options granted subsequent to December 31, 1994 under the fair value method of that Statement. The fair value for these options was estimated at the date of grant using a Black-Scholes option pricing model with the following assumptions for the years ended December 31, 2003, 2002, and 2001:

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

	Years Ended December 31,		
	2003	2002	2001
U.S. Government zero coupon 7-year bond interest rates:	3.79%	4.93%	5.11%
Dividend yield:	0.00%	0.00%	0.00%
Weighted-average expected life of the option:	7 years	7 years	7 years
Volatility factors:	102.49%	78.36%	92.30%
Weighted-average fair value of the options granted:	$ 3.21	$ 4.905	$ 7.392

For purposes of the pro forma disclosures, the estimated fair value of the options is amortized to expense over the vesting period of the respective option. Because FASB No. 123 is applicable only to options granted subsequent to December 31, 1994, its pro forma impact was not fully reflected until 2002. The pro-forma impact on the three years shown is meant to approximate the effects of the expensing of stock options.

The following table illustrates the effect on net loss and loss per share had compensation cost for all of the stock-based compensation plans been determined based on the grant date fair values of awards (the method described in FASB Statement No. 123, Accounting for Stock-Based Compensation):

	Years Ended December 31,		
	2003	2002	2001
Net Loss:			
As reported	$(5,827,650)	$(5,155,237)	$(5,740,243)
Deduct total stock-based employee compensation expense determined under fair value based method for all awards	(1,824,906)	(2,298,786)	(1,545,469)
Pro forma net loss	(7,652,556)	(7,454,023)	(7,285,712)
Loss per share:			
Basic - As reported	(0.38)	(0.35)	(0.42)
Basic - Proforma	(0.50)	(0.51)	(0.53)
Diluted - As reported	(0.38)	(0.35)	(0.42)
Diluted - Proforma	(0.50)	(0.51)	(0.53)

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

Fair Value of Financial Instruments

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

Net Loss Per Share

Net loss per common share is computed based upon the weighted average number of common shares outstanding. Common equivalent shares of 342,652 for 2003, 476,473 for 2002, and 596,140 for 2001 are not included in the per share calculations because the effect of their inclusion would be anti-dilutive.

	Years ended December 31,		
	2003	2002	2001
Net loss	$ (5,827,650)	$ (5,155,237)	$ (5,740,243)
Weighted average common shares outstanding	15,391,537	14.551,479	13,667,062
Net loss per common share-basic and diluted	$ (0.38)	$ (0.35)	$ (0.42)

Recently Issued Accounting Standards

In January 2003, the Financial Accounting Standards Board (FASB) issued FASB Interpretation No. 46 (FIN 46), "Consolidation of Variable Interest Entities." The Company currently has no arrangements that would be subject to this interpretation.

In April 2003, the FASB issued Statement of Financial Accounting Standards (SFAS) No. 149, "Amendment of Statement 133 on Derivative Instruments and Hedging Activities". The adoption of SFAS No. 149 will have no effect on the Company's financial statements.

In May 2003, the FASB issued SFAS No. 150, "Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity," which requires certain financial instruments to be classified as a liability (or an asset in some circumstances). Based on financial instruments currently outstanding, SFAS No. 150 will have no effect on the Company's financial statements.

Reclassifications

Certain items in the 2001 and 2002 financial statements have been reclassified to conform to the 2003 presentation with no effect on net loss.

(3) Investments

Investments at December 31, 2003 and 2002 were comprised of variable rate demand notes, certificates of deposit and a money market fund. These investments had an approximate fair value of $4,600,000 and $7,100,000 at December 31, 2003 and 2002, respectively. All investments have been classified as held-to-maturity. Included in investments is $581,489 and $640,464 at December 31, 2003 and 2002, respectively, in the form of certificates of deposit which are pledged as collateral, primarily for the Company's business insurance premiums (see Note 7), and restricted as to withdrawal or usage. Investments held in short-term commercial paper have maturity days of less than 30 days and certificates of deposit have maturities ranging from 1 to 13 months.

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

(4) Inventories

Inventories consist of the following:

	As of December 31,	
	2003	2002
Raw materials	$ 393,995	$ 489,730
Finished goods	900,185	1,149,368
	1,294,180	1,639,098
Allowance for excess quantities	(611,181)	(657,264)
	$ 682,999	$ 981,834

The activity in the Allowance for Excess Inventory Quantities as follows:

	2003	2002
Balance, Beginning of year	$657,264	$631,002
Deductions(1)	(46,083)	(28,834)
Costs and Expenses	—	55,096
Balance, End of year	$611,181	$657,264

(1) Reduction in inventory allowance as a result of the disposal or sale of inventories for which an allowance had previously been provided.

(5) Equipment and Leasehold Improvements

Equipment and leasehold improvements consist of the following:

	As of December 31,	
	2003	2002
Machinery and equipment	$ 8,766,084	$ 7,916,217
Office equipment	366,460	348,926
Office furniture	75,871	75,871
Leasehold improvements	4,374,732	4,339,789
Construction in progress	74,029	755,762
	13,657,176	13,436,565
Less: Accumulated depreciation and amortization	(5,464,181)	(4,003,328)
	$ 8,192,995	$ 9,433,237

Depreciation expense was $1,460,853, $1,223,359, and $705,070, for the years ended December 31, 2003, 2002, and 2001, respectively.

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

(6) Intangible Assets

The following is a summary of intangible assets at December 31, 2003 and 2002:

	2003		2002	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Subject to Amortization:				
Trademarks	$ 14,921	$ 5,062	$ 32,838	$ 9,968
Patents	167,249	56,000	155,643	46,408
	$ 182,170	$ 61,062	$ 188,481	$ 56,376

Amortization expense recognized on all amortizable intangibles totaled $9,949, $14,459 and $9,206 for the years ended December 31, 2003, 2002, and 2001, respectively.

Estimated aggregate amortization expenses for each of the next five years is as follows:

Year ending December 31:	
2004	$10,993
2005	10,993
2006	10,993
2007	10,993
2008	10,993

(7) Pledged Assets and Long-Term Debt

In November 2000, the Company executed a three-year promissory note, held by the Company's largest customer, in the amount of $1,293,895 for the construction of additional production capabilities at the Company's Romeoville, Illinois facility. At December 31, 2003, 2002, and 2001, borrowings against this note amounted to $856,267, $1,051,035, and $1,293,895, respectively. The note bears interest at 8.45% per annum, with interest accruing beginning January 1, 2002, and the first payment commencing in February of 2002. The note is collateralized by certain powder coating, packaging, lab and related equipment. Contractually, the Company has seventeen months to pay back this note, based on a rate per kilogram of product shipped, with any remaining outstanding balance at June 1, 2005 becoming payable on demand. An estimated twelve months worth of payments are included in the current portion of the Company's long-term debts.

In December 2002, the Company financed $595,000 in insurance premiums at 5.33% per annum through October 2003. The balance due on the note was $541,647 at December 31, 2002. In December 2003, the Company financed $430,000 in insurance premiums at 4.87% per annum through October 2004. The balance due on the note remained at $429,955 at December 31, 2003. The note is collateralized by a declining letter of credit to be reduced over the life of the obligation.

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

(8) Lease Commitments

The Company leases its operating facilities under operating leases. Nanophase leases its Romeoville facility under an agreement whose initial term will expire in July 2006, with an option to extend the lease for two additional periods of five years each. The current monthly rent on this lease amounts to $24,100. Nanophase leases its Burr Ridge facility under an agreement whose initial term expired in September 1999. The Company has options to extend the lease for up to five additional one-year terms and is currently in the fifth additional one-year term, which expires in September 2004. The current monthly rent on this lease amounts to $9,403.

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

Year ending December 31:	
2004	$ 401,991
2005	310,653
2006	184,347
Total minimum payments required:	$ 896,991

Rent expense, including real estate taxes, under these leases amounted to $511,112, $516,352, and $523,615, for the years ended December 31, 2003, 2002, and 2001, respectively.

During the years ended December 31, 2003 and 2002, the Company entered into capital leases for equipment. At December 31, 2003 and 2002, equipment under capital leases cost $203,444 respectively, with accumulated depreciation of $87,350 and $59,417, respectively. The following is a schedule of future minimum lease payments as required under the above capital leases:

Year ending December 31:	
2004	$ 46,413
2005	12,111
	58,524
Less: Amount representing interest	(3,089)
Present value of net future minimum lease payments	55,435
Less: Current Portion	(43,609)
	$ 11,826

(9) Accrued Expenses

Accrued expenses consist of the following:

	As of December 31,	
	2003	2002
Accrued payroll and related expenses	$ 290,368	$ 445,970
Accrued professional services	124,622	181,149
Other	328,781	361,881
	$ 743,771	$ 989,000

(10) Research and Development Arrangements

The Company is party to a number of research and development arrangements with commercial entities, some of which provide revenues to the Company. These arrangements are generally short-term in nature and provided no revenues for the years ended December 31, 2003 and 2002, and $47,450 for 2001, respectively.

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

(11) License Agreements

The Company was granted a non-exclusive license by a third party to make, use, and sell products of the type claimed in two U.S. patents. In consideration for this license, the Company agreed to pay royalties of 1% of net sales, as defined, and made an advance royalty payment of $17,500. Royalties under this agreement amounted to approximately $25,600, $37,000, and $35,200 for the years ended December 31, 2003, 2002, and 2001, respectively

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 C. I. Kasei, a division of Itochu Corporation ("CIK"). Under this agreement, the Company also will 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 the years ended December 31, 2003, 2002, and 2001, respectively.

(12) Income Taxes

The Company has net operating loss carryforwards for tax purposes of approximately $52,400,000 at December 31, 2003, which expire between 2005 and 2023.

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,	
	2003	2002
Deferred tax assets:		
Net operating loss carryforwards	$ 20,441,000	$ 17,612,000
Foreign tax credit carryforward	156,000	246,000
Inventory and other allowances	258,000	281,000
Excess (tax) book depreciation	(126,000)	(32,000)
Other accrued costs	68,000	95,000
Total deferred tax assets	20,797,000	18,202,000
Less: Valuation allowance	(20,797,000)	(18,202,000)
Deferred income taxes	$ —	$ —

The valuation allowance increased $2,595,000 for the year ended December 31, 2003 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. 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.

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

As a result of certain transactions with third parties operating in foreign countries, the Company may be subject to the withholding and payment of foreign income taxes as transactions are completed. Under the Internal Revenue Code, foreign tax payments may be used to offset federal income tax liabilities when incurred, subject to certain limitations. At December 31, 2003, the Company has a foreign tax credit carryforward of $156,000.

(13) Capital Stock

In October 1998, pursuant to a Stockholder Rights Agreement between the 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. 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, 2008. On September 5, 2003, in anticipation of the September 8, 2003 private placement to Grace Brothers Ltd., the Company amended its existing 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%.

At December 31, 2003, 2,500 shares of authorized but unissued Preferred Stock have been reserved for future issuance regarding the Rights. In addition, 2,288,119 authorized but unissued shares of common stock have been reserved for future issuance upon exercise of stock options.

(14) Stock Options, Warrants, and Stock Grants

The Company has entered into stock option agreements with certain officers, employees, directors and three members of the Company's former Advisory Board. At December 31, 2003, the Company had outstanding options to purchase 1,928,619 shares of common stock. The stock options generally expire ten years from the date of grant. Of the total number of options granted, 564,588 of the outstanding options vest over a five-year period, 1,325,950 vest over a three-year period from their respective grant dates and 38,081 vest on the eighth anniversary following their grant date.

Exercise prices are determined by the Compensation and Governance Committee of the Board of Directors and equal the estimated fair values of the Company's common stock at the grant date. The table below summarizes all option activity through December 31, 2003:

	Number of Options	Exercise Price	Weighted Average Exercise Price
Outstanding at January 1, 2001	1,451,681	.112-11.625	3.876
Options granted during 2001	482,200	7.062-12.250	9.075
Options exercised during 2001	(105,212)	.432-7.625	2.888
Options canceled during 2001	(13,443)	1.727-10.875	6.749
Outstanding at December 31, 2001	1,815,226	.112-12.250	5.293
Options granted during 2002	297,900	3.780-6.650	6.554
Options exercised during 2002	(20,296)	.112-3.886	2.195
Options canceled during 2002	(5,980)	3.813-12.250	8.485
Outstanding at December 31, 2002	2,086,850	.112-11.625	5.495
Options granted during 2003	251,800	3.660-5.550	3.791
Options exercised during 2003	(287,446)	.432-3.886	2.078
Options canceled during 2003	(122,585)	3.660-10.875	6.689
Outstanding at December 31, 2003	1,928,619	.112-11.625	5.705

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

Information with respect to stock options outstanding and stock options exercisable at December 31, 2003 follows:

	Options Outstanding		
	Number Outstanding at December 31, 2003	Weighted-Average Remaining Contractual Life (Years)	Weighted-Average Exercise Price
Range of Exercise Prices			
$0.112-0.432	31,846	.654	$ 0.287
$1.727-2.375	190,911	5.084	1.941
$2.813-3.886	675,947	5.644	3.622
$5.000-7.063	501,240	6.705	6.693
$7.625-11.625	528,675	5.757	9.118
	1,928,619		

	Options Exercisable	
	Number Exercisable at December 31, 2003	Weighted-Average Exercise Price
Range of Exercise Prices		
$0.112-0.432	31,846	$ 0.287
$1.727-2.375	167,911	1.893
$2.813-3.886	406,737	3.576
$5.000-6.650	135,342	6.443
$7.063-10.188	438,035	7.601
$10.875-11.625	144,657	10.907
	1,324,528	5.708

Option shares exercisable at December 31, 2002 and 2001, were 1,186,504 and 787,210 and had a weighted average exercise price of $4.400 and $3.390, respectively.

In connection with the issuance of Series C convertible preferred stock in 1993, the Company issued common stock purchase warrants for 662,287 shares at no additional cost to the Series C convertible preferred stockholders. At the Company's initial public offering on November 26, 1997, all preferred stock shares were converted to common stock shares. These warrants had an exercise price of $1.123 per share and expired upon the tenth anniversary of issuance. For the year ended December 31, 2002, 28,950 warrants were converted into 28,950 shares of common stock and were exercised for $32,511. At December 31, 2003 there were 453,001 warrants issued, outstanding, and exercisable. All of these outstanding warrants were issued pursuant to the Company's September 8, 2003 private equity offering at a rate of one per common share purchased. Their exercise price is $4.415 per share and they expire on September 8, 2004. No warrants were exercised in 2003.

For the years ended December 31, 2003, 2002, and 2001, the Company recognized $74,268, $82,550, and $72,303 in stock compensation expense related to the grant of 24,350, 12,700, and 6,805

shares of stock to five directors respectively. Also, in December of 2002, an officer of the Company resigned, however, her services were retained on a consulting basis for one year. The terms of her consulting agreement allowed for all stock options previously granted to remain in effect during the term of this agreement, subject to her complying with all her obligations under the agreement. Upon the end of the term, any stock options previously granted became fully vested and exercisable in accordance with the applicable option agreement underlying each grant. Therefore, the Company is required to estimate the fair value of these options pursuant to accounting provided for under FASB No.123. The fair value of these options was estimated at December 6, 2002, the date the consulting agreement began through December 31, 2003, the termination date of the agreement. March 30, 2004 is the last date allowable to exercise these options. Using the Black-Scholes option pricing model to calculate the appropriate expense the Company recorded $79,750 in deferred compensation cost of which $12,681 was recognized as compensation expense in December of 2002 with the remaining $67,069 expensed in 2003. There is no cash impact to the Company with respect to this calculation, which is required under FAS No. 123.

(15) 401(k) Profit-Sharing Plan

The Company has a 401(k) profit-sharing plan covering substantially all employees who meet defined service requirements. The plan provides for deferred salary contributions by the plan participants and a maximum contribution by the Company not to exceed 3% of the participant's salary. The Company contributions under this plan were $81,875, $82,618, and $81,579 for the years ended December 31, 2003, 2002, and 2001, respectively.

(16) Related Party Transactions

The Company terminated its consulting agreement with Dr. Richard W. Siegel, a director/stockholder, in July 2002. Payments under this agreement were $2,000 per month. Dr. Siegel remains a director of the Company.

(17) Significant Customers and Contingencies

Revenue from three customers constituted approximately 61.0%, 22.4%, and 10.7%, respectively, of the Company's 2003 revenue. Amounts included in accounts receivable at December 31, 2003 relating to these three customers were approximately $557,000, $357,000 and $281,000, respectively. Revenue from these three customers constituted approximately 72.6%, 2%, and 6.8%, respectively, of the Company's 2002 revenue. Amounts included in accounts receivable at December 31, 2002 relating to these three customers were approximately $610,000, $21,000, and $295,000, respectively.

The Company currently has supply agreements with BASF and RHEM that have contingencies outlined in them which could potentially result in the license of technology and/or, as provided for in the supply agreement, as amended on March 17, 2003, with the Company's largest customer, the sale of production equipment, providing capacity sufficient to meet the customer's production needs, from the Company to the customer, if triggered by the Company's failure to meet certain performance requirements and/or certain financial condition covenants. The financial condition covenants included in the Company's supply agreement with its largest customer "triggers" a technology transfer (license or, optionally, an equipment sale) in the event (a) that earnings of the Company for a twelve month period ending with its most recently published quarterly financial statements are less than zero and its cash, cash equivalents and 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) the Company's insolvency, as further defined within the agreement. In the event of an equipment sale, upon incurring a triggering event, the equipment would

be sold to the customer at 115% of the equipment's net book value. In March 2003, the $2,000,000 "trigger" referenced above was reduced from $4,000,000 pursuant to an amendment to the supply agreement with the Company's largest customer.

The Company believes that it has complied with all contractual requirements and that it has not had a "triggering event". The Company further believes that the proceeds of the May 29, 2002 and September 8, 2003 private placements provide sufficient cash balances to avoid the first triggering event referenced above for the foreseeable future. Further, the Company expects, although such events are not guaranteed, to receive some portion of an additional $15 million in equity capital relating to its January 22, 2004 universal shelf registration filing and an additional $2 million in possible equity capital relating to the future exercise of warrants issued in its September 2003 fundraising prior to their expiration in September 2004. If a triggering event were to occur and the Company's largest customer elected to proceed with the transfer and related sale mentioned above, the Company would receive royalty payments from its customer for products sold using the Company's technology; however, the Company would lose both significant revenue and the ability to generate significant revenue to replace that which was lost in the near term. Replacement of necessary equipment that would be purchased and removed by the customer pursuant to this triggering event could take in excess of twelve months. Any additional capital outlays required to rebuild capacity would probably be greater than the proceeds from the purchase of the assets as dictated by the Company's agreement with the customer. Such an event would also result in the loss of many of the Company's key staff and line employees due to economic realities. The Company believes that its employees are a critical component of its success and would be difficult to replace and train quickly. Given the occurrence of such an event, the Company might not be able to hire and retain skilled employees given the stigma relating to such an event and its impact on the Company.

(18) Quarterly Financial Data (Unaudited)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2003				
Total revenue	$ 1,664,082	$ 1,307,536	$ 1,238,973	$ 1,236,070
Loss from operations	(1,420,886)	(1,539,950)	(1,350,130)	(1,450,106)
Net loss	(1,436,717)	(1,562,185)	(1,365,954)	(1,462,794)
Basic and diluted loss per share	(0.09)	(0.10)	(0.09)	(0.09)
2002				
Total revenue	$ 1,407,683	$ 1,661,846	$ 1,253,410	$ 1,078,276
Loss from operations	(1,496,241)	(1,225,996)	(1,020,593)	(1,378,022)
Net loss	(1,494,695)	(1,252,698)	(995,785)	(1,412,059)
Basic and diluted loss per share	(0.11)	(0.09)	(0.07)	(0.09)

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

(19) Contingent Liabilities

In 1998, Harbour Court LPI, a small stockholder of the Company, sued us, several of the Company's then-current and former officers and the underwriters of the Company's initial public offering of common stock in the United States District Court for the Northern District of Illinois. The complaint alleged that the defendants had violated the federal Securities Exchange Act of 1934 by making supposedly fraudulent material misstatements and omissions of fact in connection with soliciting consents to the Company's initial public offering from certain of its preferred stockholders. The supposed misrepresentations concerned purported mischaracterization of revenue that the Company received from its then-largest customer. The complaint further alleged that the suit should be maintained as a plaintiff class action on behalf of certain former preferred stockholders whose shares of preferred stock were converted into common stock in connection with the Company's initial public offering. The complaint sought relief including unquantified compensatory damages and attorneys' fees. In September 2000, each defendant answered the complaint, denying all wrongdoing. Following certain discovery, the Company agreed to settle all claims against all defendants for $800,000, plus up to an additional $50,000 for the cost of settlement administration. The settlement did not admit liability by any party. The Court ordered final approval of the settlement in January 2002 and concurrently dismissed the complaint with prejudice. In January 2003, the Court approved interim payment to plaintiffs of $17,102 in settlement administration costs. Because both the settlement and the settlement administration costs were funded by Nanophase's directors and officers liability insurance, neither the settlement nor the settlement administration costs payments have had a material adverse effect on the Company's financial position or results of operations.

In November 2001, George Tatz, a purchaser of 200 shares of the Company's common stock, sued Nanophase and Joseph Cross, its president and CEO, in the United States District Court for the Northern District of Illinois. The complaint alleged that defendants violated the federal Securities Exchange Act of 1934 by making supposedly fraudulent material misstatements and omissions of fact in connection with the Company's public disclosures, including certain press releases, concerning its dealings with Celox, a British customer. The complaint further alleged that the action should be maintained as a plaintiff class action on behalf of certain buyers who purchased shares of the Company's common stock from April 5, 2001 through October 24, 2001. The complaint sought relief including unquantified compensatory damages and attorneys' fees. In March 2002, plaintiff filed an amended complaint, alleging that the Company and four of its officers (Joseph Cross, its chief executive officer; Daniel Bilicki, its vice president of sales and marketing; Jess Jankowski, its acting chief financial officer; and Gina Kritchevsky, its then-current chief technology officer) were liable under the federal Securities Exchange Act of 1934 for making supposedly fraudulent material misstatements and omissions of fact in connection with the Company's press releases, publicly-filed reports and other public disclosures concerning Nanophase's relationship with Celox and the Company's purportedly improper booking, and later reversal, of $400,000 in revenue from a one-time sale to that customer treated as a bill and hold transaction. The amended complaint alleged the same class and sought the same relief as in plaintiff's initial complaint. In November 2002, defendants answered the amended complaint, denying all wrongdoing. Following initial discovery, on June 11, 2003, the Company agreed to settle all claims against all defendants for $2,500,000. On June 12, 2003, the court certified the class alleged in the amended complaint. On December 1, 2003, the court ordered final approval of the settlement and dismissed the amended complaint with prejudice. The settlement did not admit liability by any party. Because the settlement was funded by the Company's directors and officers liability insurance, the settlement has not had a material adverse effect on Nanophase's financial position or results of operations.

NANOPHASE TECHNOLOGIES CORPORATION

NOTES TO FINANCIAL STATEMENTS - (Continued)

(20) Subsequent Event

On March 23, 2004, the Company received $10,000,000 in gross proceeds in the form of an equity investment in exchange for 1,256,281 shares of common stock. The shares of common stock are restricted, and therefore, not freely saleable, until March 23, 2006.

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, 2004.

NANOPHASE TECHNOLOGIES CORPORATION

By: /s/ Joseph Cross

Joseph Cross
President and Chief Executive 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, 2004.

Signature	Title
/s/ Joseph Cross Joseph Cross	President, Chief Executive Officer (Principal Executive Officer) and a Director
/s/ Jess Jankowski Jess Jankowski	Acting Chief Financial Officer, Corporate Controller, Treasurer and Secretary (Principal Financial and Accounting Officer)
/s/ Donald S. Perkins Donald S. Perkins	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 Siegel Richard Siegel	Director
/s/ R. Janet Whitmore R. Janet Whitmore	Director

Table of Contents

EXHIBIT INDEX

4.10	Stock Purchase Agreement dated March 23, 2004 between the Company and Altana Chemie AG.
4.11	Registration Rights Agreement dated March 23, 2004 between the Company and Altana Chemie AG.
10.26	Employment Agreement dated February 17, 2000 between the Company and Mr. Jess Jankowski.
10.27	Employment Agreement dated September 26, 2001 between the Company and Dr. Richard W. Brotzman.
10.28*	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.).
10.29	Joint Development Agreement dated March 23, 2004 between the Company and Altana Chemie AG.
23.1	Consent of McGladrey & Pullen, LLP.
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.

* Confidentially requested, confidential portions have been omitted and filed separately with the Commission as required by Rule 24b-2.

EXHIBIT 4.10

STOCK PURCHASE AGREEMENT

THIS STOCK PURCHASE AGREEMENT (the "Agreement") is dated as of March 23, 2004 by and between NANOPHASE TECHNOLOGIES CORPORATION, a Delaware corporation located at 1319 Marquette Drive, Romeoville, Illinois (the "Company"), and Altana Chemie AG, a German corporation (the "Purchaser").

Purchaser and the Company acknowledge and agree that this Agreement is being executed in connection with the execution of that certain Joint Development Agreement dated on or about the date hereof between Purchaser and the Company and that the acquisition of the Shares pursuant to this Agreement is part of the strategic relationship between Purchaser and the Company commencing pursuant to and evidenced (in part) by such Joint Development Agreement.

SECTION 1

Sale of Common Stock

Subject to the terms and conditions hereof, the Company has offered, and will issue and sell (the "Offering") to Purchaser, and Purchaser will buy from the Company, 1,256,281 shares of common stock, US$.01 par value per share, of the Company (the "Common Stock") for the purchase price of US$7.96 per share and an aggregate purchase price of US$10,000,000. The shares of Common Stock to be issued and sold by the Company and purchased by Purchaser pursuant to this Agreement are herein referred to as the "Shares."

The Shares will be offered and sold without registration under the Securities Act of 1933, as amended (the "Securities Act"), in reliance upon the exemption from registration provided by Section 4(2) of the Securities Act and Regulation D thereunder.

Purchaser will be required to hold the Shares for a period of at least two (2) years as contemplated in Section 5.1 below. Following the expiration of the Retention Period (as defined in Section 5.1 below), Purchaser (and any subsequent permitted transferees) will be entitled to the benefits of a Registration Rights Agreement, dated as of the date hereof, by and between the Company and the Purchaser. Pursuant to the Registration Rights Agreement, the Company will file with the Securities and Exchange Commission (the "SEC" or the "Commission") a registration statement on Form S-3 pursuant to SEC Rule 415 (the "Registration Statement") under the Securities Act relating to the resale of the Shares by Purchaser. The Company shall use its best efforts to cause such Registration Statement to be declared effective as soon as practicable following the expiration of the Retention Period and to be maintained effective until the earlier of (i) the date on which all Shares have been resold under such Registration Statement and (ii) the date on which all Registrable Securities (as defined in the Registration Rights Agreement) may be resold without restriction or limitation (the "Effectiveness Period"). Should the Registration Statement for the Shares not be declared effective within 60 days of the end of the Retention Period or should the effectiveness lapse prior to the end of the Effectiveness Period, Purchaser shall have demand registration rights to the extent set forth in the Registration Rights Agreement.

SECTION 2

Closing; Delivery

2.1. Closing. The closing of the purchase and sale of the Shares hereunder (the "Closing") shall be held at the Chicago offices of the Company's counsel at 225 W. Wacker Drive, Chicago, Illinois, or at such other place upon which the Company and Purchaser shall agree. The Closing shall occur simultaneously with or immediately after the execution and delivery of this Agreement by Purchaser and the Company, or on such later date as the Company and Purchaser may agree.

2.2. Delivery. At the Closing, or within a reasonable period of time thereafter, the Company will deliver to Purchaser at Purchaser's address in Germany a certificate, registered in the name of Purchaser for the number of Shares to be purchased by Purchaser against payment of the purchase price therefor by wire transfer per the Company's wiring instructions.

SECTION 3

Representations and Warranties of the Company

For purposes of this Agreement, a party will be deemed to have "knowledge" of a particular fact or other matter if any individual who is serving as an officer of such party is, or at any time was, actually aware of such fact or other matter; *provided, however,* that, in the case of the Company, the Company's knowledge with respect to any equity owner of the Company's securities shall be deemed to include facts and other matters included in such equity owner's filings with the SEC under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), public announcements or notices to the Company.

The Company represents, warrants and covenants to Purchaser as follows:

3.1. Organization and Standing; Articles and By-Laws. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of its organization. The Company has the requisite power and authority to own and operate its properties and assets and to carry on its business as presently conducted and as now proposed to be conducted. The Company is qualified to do business as a foreign corporation in all jurisdictions where the ownership of its properties and assets and the conduct of its business requires such qualification, except where the failure to be so qualified will not have a material adverse effect on the business of the Company taken as a whole, as such business is now conducted. The Company has furnished, or as soon as practicable, and in no event later than the day immediately prior to Closing, will furnish, to Purchaser true and correct copies of the Company's Certificate of Incorporation, as amended and as in effect on the date hereof (the "Certificate of Incorporation") and certified by the Secretary of State of the State of Delaware within the preceding 10 business days, and the Company's Bylaws, as in effect on the date hereof (the "Bylaws") certified by the Company's Secretary.

3.2. Corporate Power. The Company has all requisite legal and corporate power and authority to execute and deliver this Agreement and to execute and deliver the agreements set forth as Exhibits hereto (collectively with this Agreement, the "Agreements"), and at the Closing to sell and issue the Shares as set forth in the Agreements, and to carry out and perform its obligations under the Agreements.

3.3. Subsidiaries. The Company has no subsidiaries, and does not otherwise own or control, directly or indirectly, any equity interest in any corporation, association or business entity.

3.4. Capitalization. As of the date hereof, the authorized capital stock of the Company consists of 25,000,000 shares of Common Stock and 24,088 shares of Preferred Stock (the "Preferred Stock"). As of March 17, 2004, there were 16,115,533 shares of Common Stock issued and outstanding, and no shares of Preferred Stock issued and outstanding. No other shares of capital stock are issued and outstanding. As of March 17, 2004, there were options and warrants outstanding issued by the Company to purchase an aggregate of 1,715,759 shares and 453,001 shares of Common Stock, respectively. All of the outstanding shares of Common Stock are duly authorized, validly issued, fully paid and nonassessable, and all such shares were issued in material compliance with all applicable federal and state securities laws, including available exemptions therefrom, and none of such issuances were made in violation of any pre-emptive or other rights. The Company has reserved (i) 1,582,849 shares of Common Stock for issuance pursuant to its Amended and Restated 1992 Stock Option Plan, (ii) 900,000 shares of Common Stock for issuance pursuant to its 2001 Equity Compensation Plan, and (iii) 453,001 shares of Common Stock for issuance upon exercise of existing outstanding warrants. Except as set forth above, there are no options, warrants or other rights (including conversion, pre-emptive or other rights) or agreements outstanding to purchase any of the Company's authorized and unissued capital stock. In addition, all shares of the Company's common stock issued after adoption of the Company's Rights Agreement referenced in Section 5.12 below have been issued with the rights set forth in the Rights Agreement to purchase Series A Junior Participating Preferred Stock as and to and to the extent set forth in the Rights Agreement (the "Rights"). Accordingly, the Shares will be issued with such Rights attached as contemplated in the Rights Agreement.

3.5. Authorization; Valid Issuance. (a) All corporate action on the part of the Company, its officers, directors and stockholders necessary for the authorization, execution, delivery and performance of the Agreements by the Company, and for the authorization, the sale, issuance and delivery of the Shares, and the performance of all of the Company's obligations under the Agreements has been taken or will be taken prior to the Closing. The Agreements have been duly executed and delivered by the Company and constitute valid and binding obligations of the Company, enforceable in accordance with their terms, subject to applicable bankruptcy, insolvency, reorganization or similar laws affecting creditors' rights generally and to general principles of equity and to limitations on the rights to indemnity and contribution that exist by virtue of public policy (the "Bankruptcy and Equity Exception"). The Shares, when issued pursuant to this Agreement, will be validly issued, fully paid and nonassessable.

(b) The Shares and the associated Rights will, upon issuance pursuant to the terms hereof and upon payment therefor, be duly authorized and validly issued, fully paid and non-assessable and will be free of preemptive or similar rights.

3.6. Reports and Financial Statements. (a) The Company made available to Purchaser prior to the execution of this Agreement a copy of the Company's Annual Report for the year ended December 31, 2002, the Company's Quarterly Reports on Form 10-Q that have been filed for all quarters ended since December 31, 2002, the definitive proxy statement for the Company's 2003 annual meeting of stockholders, if filed with the Commission as of the date hereof, and any Current Reports on Form 8-K filed since December 31, 2002 (as such documents have since the time of their filing been amended or supplemented) together with all reports, documents and information hereafter filed with the SEC, including all information incorporated therein by reference (collectively, the "SEC Reports"). The SEC Reports (a) complied and will comply as to form in all material respects with the requirements of the Securities Act and the Exchange Act, and (b) did not contain and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The audited consolidated financial statements and unaudited interim consolidated financial statements (including, in each case, the notes, if any, thereto), if any, included in the SEC Reports complied and will comply as to form in all material respects with the SEC's rules and regulations with respect thereto), were

prepared in accordance with generally accepted accounting principles applied on a consistent basis during the periods involved (except as may be indicated therein or in the notes thereto) and fairly present (subject, in the case of the unaudited interim financial statements, to normal, recurring year-end audit adjustments not material and to the absence of footnotes) the financial position and stockholders' equity of the Company as of the respective dates thereof and the consolidated earnings and cash flows for the respective periods then ended.

(b) The Company has a duly constituted audit committee of its Board of Directors (the "Audit Committee"), all of whose members are "independent" as defined in Rules 4200(a)(14) and 4350(d)(2) of the National Association of Securities Dealers, Inc. and such committee has operated in accordance with applicable law and regulations, the requirements of the Nasdaq National Market ("Nasdaq"). The Company's independent public accountants have reviewed each interim financial statement in accordance with the requirements of applicable federal securities laws, the Audit Committee's charter, the Commission's rules and regulations and the applicable rules of Nasdaq. The Company has received no communications from its independent public accountants that the independent public accountants are considering or are likely to consider issuing any report other than a clean, unqualified opinion as to the Company's audited financial statements or have raised any unresolved issues with respect to any of the Company's interim financial statements.

3.7. No Integration. Neither the Company nor, to the Company's knowledge, its affiliates (as defined in Rule 501(b) under the Securities Act) ("Affiliates") has, directly or through any agent, during the six month period ending on the date of this Agreement, sold, offered for sale, solicited offers to buy or otherwise negotiated in respect of, any security (as defined in the Securities Act) in a manner that would cause the offer and sale of the Shares to fail to be entitled to the exemption afforded by Rule 506 of Regulation D, or under Section 4(2) of the Securities Act.

3.8. No Public Offering. Neither the Company nor, to the Company's knowledge, its Affiliates has engaged, in connection with the offering of the Shares, (i) in any form of general solicitation or general advertising within the meaning of Rule 502(c) under the Securities Act, (ii) in any manner involving a public offering within the meaning of Section 4(2) of the Securities Act, (iii) in any action which would violate applicable state securities, or "blue sky," laws, or in any directed selling efforts within the meaning of SEC Regulation S.

3.9. Conformity of Descriptions. The Shares conform in all material respects to the descriptions contained in the Company's SEC Reports and other filings with the SEC.

3.10. No Material Adverse Changes. Except as disclosed on Schedule 3.10 or in the SEC Reports filed not less than five (5) business days prior to the date hereof, there has been no (i) material adverse change in the business, results of operations, stockholders' equity, cash flows, financial condition of the Company taken as a whole, whether or not arising in the ordinary course of business (a "Material Adverse Effect"), or (ii) dividend or distribution of any kind declared, paid or made by the Company on any shares of its capital stock.

3.11. No Conflicts. The execution, delivery and performance of the Agreements, the issuance and delivery of the Shares by the Company and the consummation by the Company of the transactions contemplated herein and in the other Agreements do not and will not (i) conflict with or violate any provision of the Certificate of Incorporation, Bylaws or other organizational documents of the Company, (ii) conflict with, or constitute a default (or an event which, with notice or lapse of time or both, would become a default) under, or give to other individual, partnership, joint stock company, corporation, limited liability company, trust, unincorporated organization, government agency or political subdivision (each of the foregoing, a "Person") any rights of termination, amendment, acceleration or cancellation of,

any agreement, indenture, patent, license or instrument (whether evidencing a Company debt or otherwise) to which the Company is a party or by which any property or asset of the Company is bound or affected or (iii) result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company is subject (including federal and state securities laws and regulations and the rules and regulations of the principal market, system or exchange on which the Common Stock is traded, quoted or listed), or by which any assets of the Company is bound or affected.

3.12. Consents and Approvals. The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration ("Consents") with, any court or other federal, state, local or other governmental authority, regulatory or self regulatory agency ("Governmental Authorities"), or other Person in connection with the execution, delivery and performance by the Company of the Agreements, other than (i) the filing of the Registration Statement with the Commission in accordance with the Registration Rights Agreement, (ii) the application(s) or any letter(s) acceptable to Nasdaq for the listing or quoting of the Shares on Nasdaq (and with any other national securities exchange or market on which the Common Stock is then traded, listed or quoted), and the notice, if any, required by Nasdaq Rule 4310 which has been filed as shown in Schedule 3.12, (iii) any filings, notices or registrations under applicable state securities laws, (iv) the disclosure requirements of the Exchange Act, and the disclosure requirements of Item 701 of SEC Regulation S-K, (v) filing a Form D and a Form 8-K with the Commission, and (vi) any other approvals and consents set forth on Schedule 3.12 (collectively, the "Required Approvals").

3.13. Proceedings. Except as described in the SEC Reports, there is no action, suit, hearing, claim, notice of violation, arbitration or other proceeding, hearing or investigation (each, a "Proceeding") pending or, to the knowledge of the Company, threatened against or affecting the Company or any of its assets before or by any Governmental Authority or any arbitrator, which (i) adversely affects or challenges the legality, validity or enforceability of any of the Agreements, (ii) could reasonably be expected to, individually or in the aggregate, have or result in a Material Adverse Effect, or (iii) if adversely decided, could reasonably be expected to have a material adverse effect on or delay the issuance of the Shares, or the consummation of the transactions contemplated by the Agreement. The foregoing includes, without limitation, any such action, suit, proceeding or investigation that questions this Agreement or seeks to delay or prevent the consummation of the transactions contemplated hereunder or the right of the Company to execute, deliver and perform under same. The Company is not a party to or subject to the provisions of any order, writ, injunction, judgment or decree of any Governmental Authority that is reasonably likely to have a Material Adverse Effect before or after consummation of the transactions contemplated by this Agreement. No action, suit, proceeding, claim, investigation or inquiry by the Company or any subsidiary is currently pending nor does the Company presently intend to initiate any action, suit, proceeding, claim, investigation or inquiry, in each case, that if resolved in a manner adverse to the Company, is reasonably likely to have a Material Adverse Effect.

3.14. No Default or Violation. Except for those that would not, individually or in the aggregate, result in a Material Adverse Effect, the Company is not in (i) default under or in violation of any indenture, loan or other credit agreement or any other agreement or instrument to which it is a party or by which the Company of its assets or properties is bound, or (ii) violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any arbitrator or Governmental Authority applicable to it. The Company is not in default under, or in violation of, its Certificate of Incorporation, Bylaws or other organizational documents or in default under or in violation of any of the listing or, quotation requirements of Nasdaq as in effect on the date hereof and the Company is not aware of any facts which would reasonably lead to delisting or suspension of trading in the Common Stock by Nasdaq in the foreseeable future. The business of the Company is not being conducted, and the Company presently has no plans to conduct its business, in violation of any law, statute, ordinance, rule or regulation of any

Governmental Authority, except where such violations have not resulted or are not reasonably likely to result, individually or in the aggregate, in a Material Adverse Effect. The Company is not in breach of any agreement where such breach, individually or in the aggregate, is reasonably likely to have a Material Adverse Effect.

3.15. Broker's Fees. No fees or commissions or similar payments with respect to the transactions contemplated by the Agreements have been paid or will be payable by the Company to any broker, financial advisor, finder, investment banker or bank, other than fees payable to First Analysis Securities Corporation (which fees will be paid by the Company), and the Company shall indemnify and hold harmless Purchaser from and against any such claims.

3.16. Listing Compliance. The principal market on which the Common Stock is currently traded is Nasdaq, and the Company has no other securities listed or traded on any other securities exchange or automated quotation system or market. Except as disclosed on Schedule 3.16, the Company has not in the three (3) years preceding the date hereof received notice (written or oral) from Nasdaq (or any stock exchange, market or trading facility on which the Common Stock is or has been traded or listed (or on which it has been quoted)) to the effect that the Company is not in compliance with the listing or maintenance requirements of any such market, exchange or trading facility. After giving effect to the transactions contemplated by the Agreements, the Company is and will be in compliance with all such maintenance requirements.

3.17. Intellectual Property Rights. Except as disclosed on Schedule 3.17, the Company owns or possesses adequate rights or licenses to use all trademarks, trademark applications, trade names and service marks, whether or not registered, and all patents, patent applications, copyrights, inventions, licenses, approvals, governmental authorizations, trade secrets and intellectual property rights (collectively, "Intellectual Property Rights") which are necessary for use in connection with its business as now conducted and as described in the SEC Reports. The Company has no knowledge that it has infringed, and the Company is not infringing on, any of the Intellectual Property Rights of any Person. Except as disclosed in the Company's SEC Reports, there is no Proceeding which is pending, or to the Company's knowledge, is threatened against, the Company regarding the infringement of any of the Intellectual Property Rights. The Company has taken reasonable security measures to protect the secrecy, confidentiality and value of all of its Intellectual Property Rights. To the Company's knowledge, the Company has not infringed, and is not infringing, on any of the Intellectual Property Rights of any Person except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect or as is disclosed either on Schedule 3.17 or in the SEC Reports.

3.18. Registration Rights; Rights of Participation. Except as described on Schedule 3.18, (i) the Company has not granted or agreed to grant to any Person any rights (including "piggy-back" registration rights) to have any securities of the Company registered with the Commission or any other Governmental Authority which have not been satisfied, and (ii) no Person, including current or former stockholders of the Company, underwriters, brokers or agents, has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Agreements or to require that the Company include any such securities in the registration of Shares as contemplated herein. With respect to the agreements evidencing the rights set forth on Schedule 3.18 hereto, the Company has complied in all respects with the provisions therein regarding any right of first refusal, preemptive right, right of participation, or any similar right of a stockholder or any other third party to participate in the transactions contemplated by the Agreements, including, but not limited to, notice, consent and waiver requirements.

3.19. Title. Except as disclosed on Schedule 3.19, the Company has good and marketable title in fee simple to all property owned by it, in each case free and clear of all security interests, liens, pledges or negative pledges, charges, encumbrances, mortgages, hypothecations, adverse claims or equities (each, a "Lien"), except for Liens that do not materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company. Any properties held or used under lease by the Company are held by it under valid, subsisting and enforceable leases, with such exceptions as are not material and do not interfere with the use made and proposed to be made of such properties by the Company.

3.20. Permits. The Company possesses all certificates, authorizations, licenses, easements, consents, approvals, orders, permits and approvals ("Permits") necessary to own, lease and operate its properties and to conduct their businesses as currently conducted except where the failure to possess such Permits is not reasonably likely, individually or in the aggregate, to have a Material Adverse Effect ("Material Permits"), and there is no Proceeding pending, or, to the knowledge of the Company, threatened relating to the revocation, modification, suspension or cancellation of any Material Permit. The Company has fulfilled and performed all of the material obligations with respect to such Permits, and no event or change in condition has occurred which allows, or which upon notice, the lapse of time or both would allow, the revocation or termination thereof or results in any other material impairment of the rights of the holder of any such Permits, except for failures which would not, individually or in the aggregate, have a Material Adverse Effect. The Company is not in conflict with, in default under or in violation of any Material Permit.

3.21. Insurance. The Company and its respective properties are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as is prudent and customary in the business in which the Company is engaged. Except as disclosed on Schedule 3.21, all insurance policies carried by the Company are in full force in effect and the Company has no reason to believe that it will not be able to renew such existing insurance policies as and when such coverage expires or to obtain similar coverage from similar insurers, at a cost that would not materially and adversely affect the condition, financial or otherwise, or the earnings, cash flows, business or business prospects of the Company taken as a whole.

3.22. Investment Company; Public Utility Holding Company. The Company is not (i) an "investment company" or a company "controlled by" an "investment company" as such terms are defined in the Investment Company Act of 1940, as amended (the "1940 Act"), or (ii) a "public utility holding company" or a company "controlled by" a "public utility holding company," as such terms are defined in the Public Utility Holding Company Act of 1935, as amended (the "PUHC Act") and the SEC's rules and regulations under each of such Acts.

3.23. No Stabilization. Neither the Company nor, to the Company's knowledge, any of its directors, officers, or controlling persons has taken or will take, directly or indirectly, any action designed to, or which might reasonably be expected to cause or result in, or which has constituted, under the Exchange Act, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Shares.

3.24. Labor. The Company is not a party to any collective bargaining agreement covering any individual who performs services as an employee primarily for the Company (including such persons who are on an approved leave of absence, vacation, short-term disability or otherwise treated as an active employee of the Company, "Employees"), and there are no controversies or unfair labor practice proceedings pending, or to the knowledge of the Company, threatened between the Company and any of its current or former Employees or any labor or other collective bargaining unit representing any current or former Employee of the Company that would reasonably be expected to result in a labor strike, dispute,

slow-down or work stoppage or otherwise have a Material Adverse Effect. To the Company's knowledge, no organizational effort is presently being made or, to the Company's knowledge, threatened by or on behalf of any labor union.

3.25. Stock and Other Plans. Other than as disclosed in the SEC Reports, the Company does not have any profit sharing, deferred compensation, stock option, stock purchase, phantom stock or similar plans, including agreements evidencing rights to purchase securities or to share in the profits of the Company which is material to the Company, taken as a whole.

3.26. Solvency. The Company is, and immediately after the Closing will be, Solvent. As used herein, the term "Solvent" means, with respect to a particular date, that on such date, (i) the fair market value of the assets of the Company exceeds their respective liabilities (including, without limitation, stated liabilities and contingent liabilities), and (ii) the Company can pay its debts as they come due or mature. The Company has not taken any steps, and does not currently expect to take any steps, to seek protection pursuant to any bankruptcy, insolvency, debtor relief, reorganization or similar law, nor does the Company have any knowledge or reason to believe that creditors of the Company have initiated or intend to initiate involuntary bankruptcy or similar proceedings.

3.27. Environmental. Except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, (i) the Company is in compliance with and not subject to any known liability under applicable Environmental Laws (as defined below), (ii) the Company has made all filings and provided all notices required under all applicable Environmental Laws, and has, and is in compliance with, all permits required under any applicable Environmental Laws, each of which is in full force and effect, (iii) (a) there are no pending Proceedings with respect to any Environmental Laws affecting the Company, (b) the Company has not received any demand, claim or notice of violation of any Environmental Laws and (c) to the knowledge of the Company, there is no Proceeding, notice or demand letter or request for information threatened against the Company under any Environmental Law, (iv) no Lien or restriction has been recorded under any Environmental Law with respect to any assets, facility or property owned, operated, leased or controlled by the Company, (v) the Company has not received notice that it has been identified as a potentially responsible party under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), or any comparable state law, (vi) no property or facility of the Company (a) is listed or, to the knowledge of the Company, proposed for listing on the National Priorities List under CERCLA or any state list of hazardous substance sites requiring cleanup, (b) is listed in the Comprehensive Environmental Response, Compensation, Liability Information System List promulgated pursuant to CERCLA, or on any comparable list maintained by any state or local governmental authority, (vii) no Hazardous Materials are being released (as defined below) at, on or under any facility owned, operated, leased or controlled by the Company or have been Released at, on or under any facility owned, operated, leased or controlled by the Company (except as may be allowed by permit) and, to the knowledge of the Company, none of the facilities owned, operated, leased or controlled by the Company are adversely affected by any Release of Hazardous Materials originating or emanating from any other property.

For purposes of this Agreement, "Environmental Laws" means all applicable United States federal, provincial, state and local laws or regulations, codes, orders, decrees, judgments or injunctions issued, promulgated, approved or entered thereunder, relating to pollution, protection of public or employee health and safety or the environment, including, without limitation, laws relating to (i) emissions, discharges, releases or threatened releases of Hazardous Materials (as defined below) into the indoor or outdoor environment (including, without limitation, ambient air, soil, surface water, ground water, wetlands, land surface or subsurface strata), (ii) the manufacture, processing, distribution, use, generation, treatment, storage, disposal, transport or handling of Hazardous Materials, and

(iii) underground and above ground storage tanks and related piping, and emissions, discharges, releases or threatened releases therefrom. The term "Hazardous Material" means (a) any "hazardous substance," as defined in the Comprehensive Environmental Response, the Resource Conservation and Recovery Act, as amended, (b) any "hazardous waste," as defined by the Resource Conservation and Recovery Act, as amended, (c) any petroleum or petroleum product, (d) any polychlorinated biphenyl, (e) any pollutant or contaminant or hazardous, dangerous or toxic chemical, material, waste or substance, and (f) flammable explosives, radioactive materials, asbestos in any form that is or could become friable, urea formaldehyde foam insulation, lead-based paint, radon and mold. "Release" means any release, spill, emission, leaking, pumping, injection, deposit, disposal, discharge, dispersal, leaching or migration into the indoor or outdoor environment, including, without limitation, the movement of Hazardous Materials through ambient air, soil, surface water, ground water, wetlands, land surface or subsurface strata.

3.28. ERISA. Schedule 3.28 sets forth a list of each of the following that the Company maintains or contributes to or for which the Company has any liability: (i) each employee benefit plan as defined in Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), (ii) each other pension, profit sharing, incentive, employment, retirement, severance, deferred compensation or change in control plan, agreement or arrangement (each of the foregoing in (i) or (ii) a "Plan"). With respect to any such Plan, the Company has not, through its own actions or due to the actions of its Affiliates, incurred any liability for, or taken any action that would constitute, nor to the Company's knowledge has any unrelated party taken any action that would constitute or result in, any prohibited transaction, funding deficiency, plan termination or complete or partial withdrawal with respect to the Company or its Affiliates which would reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. With respect to each such Plan, the Company is in compliance in all respects with all applicable provisions of ERISA, the Internal Revenue Code of 1986, as amended (the "Code"), and other applicable laws, and the Company has performed all of its respective obligations under such Plans, except where the failure to so comply would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Each Plan intended to qualify under the provisions of Section 401(a) of the Code has received a favorable determination letter with respect to such qualification except where failure to qualify the Plan would not have a Material Adverse Effect.

3.29. Form S-3 Eligibility. In relation to the resale of the Shares by Purchaser, the Company (i) meets the requirements for use of SEC Form S-3 under the Securities Act and (ii) is eligible for filing and maintaining a registration statement on Form S-3.

3.30. Taxes. The Company (i) has made or filed all federal and state income and all other tax returns, reports and declarations required by any jurisdiction to which it is subject, and (ii) has paid all taxes and other governmental assessments and charges that are shown or determined to be due on such returns, reports and declarations or otherwise, in each case except for (A) taxes being contested in good faith and for which adequate reserves are shown in the Company's SEC Reports, or (B) any liability of the Company for taxes and other governmental assessments and charges that are not yet due and payable that has been accrued or reserved for on the financial statements of the Company in accordance with GAAP. All tax returns filed by the Company were true, correct, and complete in all material respects as of the time of such filing There are no unpaid taxes in any material amount claimed to be due from the Company by the taxing authority of any jurisdiction, and the officers of the Company know of no basis for any such claim.

3.31. Books and Records. The minute books and other records of the Company contain in all material respects accurate records of all Company board, committee and stockholders' meetings and accurately reflect in all material respects all other corporate action of the stockholders and directors and any committees thereof of the Company since January 1, 2002.

3.32. Accounting Controls. The Company maintains a system of internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles and to maintain assets accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences, except for any controls the absence of which would not result in a Material Adverse Effect.

SECTION 4

Covenants of the Company

The Company hereby covenants with Purchaser as follows:

4.1. Notification of Certain Events. From the date hereof until the Closing, the Company will immediately notify Purchaser, and confirm such notice in writing, of (i) any filing made by the Company relating to the Offering with Nasdaq or any securities exchange or the SEC or other securities regulator in the United States or any other jurisdiction, and (ii) subject to the agreement of each of Purchaser to maintain such information in confidence, any material changes in or affecting the financial condition, earnings, cash flows, stockholders' equity, business or business prospects of the Company taken as a whole.

4.2. Offering Limitations. In connection with any offering which would be integrated into the transactions contemplated in this Agreement, none of the Company or, to the Company's knowledge, any of its Affiliates will solicit any offer to buy or offer to sell shares of Common Stock or securities convertible into or exchangeable for Common Stock by means of any form of general solicitation or general advertising (as such terms are used in Regulation D under the Securities Act) in any manner involving a public offering (within the meaning of Section 4(2) of the Securities Act) prior to the effective date ("Effective Date") of the Registration Statement.

4.3. Disclosures. Subject to Section 8.14, promptly following the Closing the Company will (i) issue a press release announcing the sale of the Shares, and (ii) file such press release and other appropriate information with the SEC on a Form 8-K. The Company shall, immediately following the filing of the Registration Statement on Form S-3 pursuant to the Registration Rights Agreement, (i) issue such press releases and make such filings under the Exchange Act, including, without limitation, the filing of Form 8-K, to disclose the sale of the Shares and the filing of the Registration Statement on Form S-3 pursuant to the Registration Rights Agreement and (ii) include in the filing of its next Form 10-Q or Form 10-K, as applicable, appropriate disclosures relating to the sale of the Shares and the filing of such Registration Statement on Form S-3, including, without limitation, the disclosure required by Item 701 of Regulation S-K. The Company shall, from and after the Closing through the period that the Registration Statement is required to be maintained, timely file all SEC Reports, comply with all requirements under the Exchange Act, continue to list the Shares on Nasdaq or a national securities exchange, and otherwise comply with the requirements of Sections 3.6, 3.12 and 3.29 hereof, which are incorporated herein.

4.4. Use of Proceeds. The Company will use the proceeds from the sale of the Shares for general working capital purposes.

SECTION 5
Representations, Warranties and Covenants of Purchaser

Purchaser hereby represents, warrants and covenants to the Company with respect to the purchase of the Shares by Purchaser as follows:

5.1. Retention of Shares; No Other Shares. During the period commencing on at the Closing and ending on the second anniversary of the Closing (the "Retention Period"), Purchaser will not directly or indirectly sell, transfer or otherwise dispose of the Shares. Prior to the Closing, Purchaser beneficially owned (as determined in accordance with SEC Rule 13d-3 under the Exchange Act) no shares of the Company's equity securities.

5.2. Experience. Purchaser has substantial experience in evaluating and investing in private placement transactions of securities in companies similar to the Company, and the Purchaser is capable of evaluating the merits and risks of its investment in the Company and has the capacity to protect its own interests.

5.3. Accredited Investor Status and Regulation S Representations.

(a) Purchaser is a large "accredited investor," as defined in SEC Regulation D promulgated pursuant to the Securities Act (meaning a corporation not formed for the specific purpose of acquiring the Shares, with total assets in excess of US$5,000,000). Purchaser represents that it has a net worth in excess of US$100,000,000. For the avoidance of doubt, Purchaser is not representing that it is a "qualified institutional buyer," as defined in Rule 144A of the Securities Act.

(b) Purchaser represents, warrants and covenants that (a) Purchaser is not a "U.S. Person" as defined in Regulation S promulgated under the Securities Act ("Regulation S"), (b) none of Purchaser, its affiliates or any person acting of behalf of Purchaser or any such affiliate has engaged, or will engage in any Directed Selling Efforts (as defined in Regulation S) with respect to the Shares during the Retention Period, (c) the transactions contemplated in this Agreement (1) have not been pre-arranged with a purchaser located in the United States who is a U.S. Person (as defined in Regulation S), and (2) are not part of a plan or scheme to evade the registration provisions of the Act, and (d) Purchaser is not an "affiliate" of the Company as defined in Rule 144 promulgated under the Securities Act.

5.4. Rule 144. Purchaser acknowledges that the Shares must be held indefinitely unless subsequently registered for resale under the Securities Act or unless an exemption from such registration is available. Purchaser is aware of the provisions of Rule 144 promulgated under the Securities Act which permit limited resale of securities purchased in a private placement, subject to the satisfaction of certain conditions, including, among other things, the existence of a public market for the shares, the availability of certain current public information about the Company, the resale occurring not less than one year after a party has purchased and fully paid for the security to be sold, the sale being effected through a "broker's transaction" or in a transaction directly with a "market maker" and the number of shares being sold during any three-month period not exceeding specified limitations.

5.5. Confidential Access to Information. Purchaser has had an opportunity to discuss the Company's business, management and financial affairs with its management. It has also had an opportunity to ask questions of officers of the Company, which questions were answered to its satisfaction. Purchaser understands that such discussions, as well as any written information issued by the Company, were intended to describe certain aspects of the Company's business and prospects. Pursuant to a confidentiality agreement, as contemplated by the SEC's Regulation FD, Purchaser acknowledges

that it has been provided access to material, non-public information and that the Purchaser will keep all such information confidential except to the extent it becomes public through no fault of the Purchaser. Further, the Purchaser acknowledges and understands the fact that the Company is seeking to effect the private placement of the Shares is material non-public information and disclosure of such information or use of such information by Purchaser or anyone receiving such information from Purchaser in connection with the purchase, sale or trade of the Company's securities (other than use by Purchaser in acquiring the Shares), or any hedging, derivative or similar transactions or activities involving the Company's securities, is a violation of securities laws. Neither such inquiries nor any other due diligence investigation conducted by Purchaser or any of its advisors or representatives shall modify, amend or affect Purchaser's right to rely on the Company's representations, warranties and covenants contained herein or in the other Agreements. **The Purchaser understands that its investment in the Shares involves a high degree of risk.**

5.6. Organization; Authorization. The Purchaser is a corporation duly formed, validly existing and in good standing under the laws of Germany with the requisite power and authority, to enter into and to consummate the transactions contemplated by the Agreements and otherwise to carry out its obligations under the Agreements. The purchase by Purchaser of the Shares hereunder has been duly authorized by all necessary action on the part of Purchaser. This Agreement, when executed and delivered by Purchaser, will constitute a valid and binding obligation of the Purchaser, enforceable in accordance with its terms, subject to the Bankruptcy and Equity Exception.

5.7. Restrictive Legends. Purchaser understands that the certificates evidencing the Shares will bear the following legends:

"THE SECURITIES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO AN AGREEMENT WITH THE ISSUER PURSUANT TO WHICH SUCH SECURITIES MAY NOT BE SOLD, TRANSFERRED OR OTHERWISE DISPOSED OF PRIOR TO MARCH 23, 2006.

THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR UNDER ANY STATE SECURITIES LAWS NEITHER THESE SECURITIES NOR ANY INTEREST OR PARTICIPATION HEREIN MAY BE REOFFERED, SOLD, ASSIGNED, TRANSFERRED, PLEDGED, ENCUMBERED OR OTHERWISE DISPOSED OF WITHIN THE UNITED STATES OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, U.S. PERSONS, OTHER THAN TO DISTRIBUTORS (AS DEFINED IN REGULATION S) IN THE ABSENCE OF SUCH REGISTRATION UNLESS SUCH TRANSACTION IS EXEMPT FROM, OR NOT SUBJECT TO, REGISTRATION UNDER THE SECURITIES ACT, AND EXCEPT AS SET FORTH BELOW. BY ITS ACQUISITION HEREOF, THE HOLDER (1) REPRESENTS THAT IT IS AN "ACCREDITED INVESTOR" (AS DEFINED IN RULE 501(A)(1), (2), (3) OR (7) UNDER THE SECURITIES ACT AND (2) AGREES THAT IT WILL NOT PRIOR TO TWO YEARS AFTER THE LATER TO OCCUR OF (I) THE ORIGINAL ISSUANCE OF THESE SECURITIES EVIDENCED HEREBY OR (II) ACQUISITION THEREOF FROM AN AFFILIATE OF THE COMPANY (THE "RESTRICTION TERMINATION DATE") OFFER, RESELL OR OTHERWISE TRANSFER THESE SECURITIES EXCEPT (A) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT, (B) TO NANOPHASE TECHNOLOGIES CORPORATION (C) OUTSIDE THE UNITED STATES IN AN OFF-SHORE TRANSACTION IN COMPLIANCE WITH

REGULATION S, (D) PURSUANT TO RULE 144, OR (E) PURSUANT TO ANY OTHER EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT (IF AVAILABLE); SUBJECT IN EACH OF THE FOREGOING CASES TO ANY REQUIREMENTS OF LAW THAT THE DISPOSITION OF THE PROPERTY OF SUCH HOLDER BE AT ALL TIMES WITHIN SUCH HOLDER'S CONTROL AND TO COMPLIANCE WITH ANY APPLICABLE STATE SECURITIES LAWS; AND (3) AGREES THAT IT WILL DELIVER TO EACH PERSON TO WHOM THESE SECURITIES ARE TRANSFERRED A NOTICE SUBSTANTIALLY TO THE EFFECT OF THIS LEGEND. IN CONNECTION WITH ANY TRANSFER OF THE SECURITY EVIDENCED HEREBY (OTHER THAN A TRANSFER PURSUANT TO SUBSECTIONS (A) OR (B) ABOVE) THE HOLDER MUST, PRIOR TO SUCH TRANSFER, FURNISH TO NANOPHASE TECHNOLOGIES CORPORATION A LEGAL OPINION ACCEPTABLE TO THE ISSUER FROM A U.S. LAW FIRM THAT SUCH TRANSFER IS BEING MADE PURSUANT TO AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT. IN ALL SITUATIONS, THE HOLDER WILL NOT, DIRECTLY OR INDIRECTLY, ENGAGE IN ANY HEDGING TRANSACTION WITH REGARD TO THE SECURITIES EXCEPT AS PERMITTED BY THE SECURITIES ACT."

In addition, Purchaser acknowledges that each certificate for Shares shall bear any additional legend required by any other applicable domestic or foreign securities or blue sky laws.

The Company will direct its transfer agent and registrar to maintain stop transfer instructions on record for the Shares until it has been notified by the Company, upon the advice of counsel, that such instructions may be waived consistent with the Securities Act and applicable domestic and foreign securities laws. Such stop transfer instructions will limit the method of sale of the Shares, consistent with Rule 144 or other available exemptions from registration under the Securities Act. Any transfers other than pursuant to a registration statement under the Securities Act will require an opinion of counsel reasonably satisfactory to the Company and its counsel prior to such transfers.

5.9. **No Governmental Review.** Purchaser understands that no United States federal or state agency or any other government or governmental agency or authority has passed upon or made any recommendation or endorsement of the Shares.

5.10. **Residency.** Purchaser is a resident of the country of Germany.

5.11. **Investment Intent.** Purchaser is acquiring the Shares for investment for its own account, not as a nominee or agent, and not with the view to any distribution, resale or transfer thereof. Purchaser understands and agrees that the Shares have not been registered under the Securities Act by reason of the exemption from the registration provisions of the Securities Act contained in Rule 506 of Regulation D and Section 4(2) of the Securities Act, the availability of which depends upon, among other things, the *bona fide* nature of the investment intent and the accuracy of Purchaser's representations, warranties and covenants as expressed herein, which are being relied upon by the Company.

5.12. **Rights Agreement.** Purchaser acknowledges that the Company has entered into a Rights Agreement, dated October 28, 1998 (as amended, the "Rights Agreement"), which Rights Agreement has been filed with the Commission as an exhibit to the Company's periodic reports. Purchaser is not, and at the time of Closing will not be, an Acquiring Person (as such term is defined in the Rights Agreement).

5.13. No Manipulation. Neither Purchaser nor, to the Purchaser's knowledge, any of its supervisory board members, management board members, managers, subsidiaries, controlling persons or other affiliates has taken, or presently plans to take, directly or indirectly, any action designed to or which might reasonably be expected to cause or result in, or which has constituted, under the Exchange Act, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Shares.

5.14. No Relationship. Neither Purchaser nor, to the Purchaser's knowledge, any of its supervisory board members, management board members, managers, subsidiaries, controlling persons or other affiliates has had any position, office or other material relationship with the Company or the Company's Affiliates within the past three years, except as contemplated by this Agreement or any agreement executed simultaneously herewith.

5.15. Additional Securities Law Matters. Purchaser (a) has no present intention to engage in short sales or other hedging activity in relation to the Company's securities, (b) has no agreements or understandings, directly or indirectly, with any person or entity to distribute the Shares, and (c) does not share voting and/or investment control over the Company's securities with any person or entity (other than relationships disclosed in the Company's most recent proxy statement filed with the SEC or in any Schedule 13D filed with the SEC by the undersigned Purchaser).

SECTION 6

Conditions to Purchaser's Obligations to Close

The obligations of Purchaser to purchase the Shares at the Closing is subject to the fulfillment of the following conditions, any of which may be waived by Purchaser:

6.1. Representations and Warranties Correct. The representations and warranties made by the Company herein shall be true and correct in all material respects as of the date when made and as of the Closing.

6.2. Covenants. All covenants, agreements and conditions contained in this Agreement to be performed by the Company on or prior to the Closing shall have been performed or complied with in all material respects.

6.3. No Injunction. No statute, rule, regulation, order, decree, ruling or injunction shall have been enacted, entered, promulgated, endorsed or threatened or is pending by or before any Governmental Authority of competent jurisdiction which restricts, prohibits or threatens to restrict or prohibit the consummation of any of the transactions contemplated by the Agreements.

6.4. No Suspensions of Trading in Common Stock. The trading in the Common Stock shall not have been restricted or suspended by the Commission, Nasdaq or any other market or exchange where such Common Stock is traded (except for any suspension of trading of limited duration solely to permit dissemination of material information regarding the Company).

6.5. Listing of Common Stock. As soon as possible after the Closing, and in connection with the filing of the Registration Statement, the Shares shall have been listed for trading or quotation on Nasdaq.

6.6 Adverse Changes. Since the date of the financial statements included in the Company's Quarterly Report on Form 10-Q, Annual Report on Form 10-K, or latest Current Report on Form 8-K, whichever is more recent, last filed prior to the date of this Agreement, no event which has had or could reasonably be expected to have a Material Adverse Effect shall have occurred.

6.7. Litigation. Except as set forth on Schedule 6.7 to this Agreement, no Proceeding shall have been instituted or threatened against the Company which could reasonably be expected to, individually or in the aggregate, have a Material Adverse Effect which has not been disclosed to Purchaser.

6.8. Change of Control. No Change of Control shall have occurred between the date hereof and the Closing. As used herein, "Change of Control" means the occurrence of any of (i) an acquisition after the date hereof by an individual or legal entity or "group" (as described in Rule 13d-5(b)(1) promulgated under the Exchange Act), other than Purchaser or any of its Affiliates, of in excess of 35% of the voting securities of the Company, (ii) a replacement of more than one-half of the members of the Company's Board of Directors that is not approved by a majority of those individuals who are members of the Board of Directors on the date hereof, or their duly elected successors who are directors immediately prior to such transaction, in one or a series of related transactions, (iii) the merger of the Company with or into another Person, unless following such transaction, the holders of the Company's securities continue to hold at least 51% of such securities following such transaction, (iv) the consolidation or sale of all or substantially all of the assets of the Company in one or a series of related transactions or (v) the execution by the Company of an agreement to which the Company is a party or by which it is bound, providing for any of the events set forth above in clauses (i), (ii), (iii) or (iv).

6.9. Certificate of Incorporation. The Company shall have delivered to Purchaser a copy of a certificate evidencing the incorporation and good standing of the Company, issued by the Secretary of State of the state where the Company is organized, as of a date within 10 days of the Closing. The Company shall have delivered to Purchaser, or its representatives, acting on behalf of Purchaser, a copy of a certificate evidencing the qualification and good standing of the Company in such other states or jurisdictions where the Company's ownership or operation of its properties or the conduct of its business require the Company to be qualified to do business as a foreign corporation.

6.10. Compliance Certificate. Should the Closing occur as of a date other than the date of this Agreement, the Company shall have delivered to Purchaser a certificate of the Company executed by the President of the Company, dated as of the Closing, certifying to the fulfillment of the conditions specified in Section 6 of this Agreement.

6.11. Secretary's Certificate. The Company shall have delivered to the Purchaser a certificate of the Company executed by the Chief Financial Officer and the Secretary of the Company, dated as of the Closing, certifying (i) resolutions adopted by the Board of Directors of the Company authorizing the execution of the Agreements, the issuance of the Shares, the filing of the Registration Statement, and the transactions contemplated hereby; (ii) the Certificate of Incorporation and Bylaws of the Company, each as amended, and copies of the third party consents, approvals and filings required in connection with the consummation of the transactions contemplated by the Agreements; and (iii) such other documents relating to the transactions contemplated by the Agreements as Purchaser may reasonably request.

6.12. Registration Rights Agreement. The Company and Purchaser shall have executed, entered into and delivered the Registration Rights Agreement, in substantially the form attached hereto as Exhibit B.

6.13. Joint Development Agreement. The Company and Purchaser shall have executed, entered into and delivered a Joint Development Agreement in form and substance acceptable to Purchaser

and the Company. It is the express intention of the parties that the transactions contemplated herein are part of the strategic relationship between Purchaser and the Company commencing pursuant to and evidenced (in part) by such Joint Development Agreement.

6.14. Other Documents. The Company shall have delivered to Purchaser such other documents relating to the transactions contemplated by the Agreements as Purchaser or their counsel may reasonably request.

6.15. Opinion of Counsel. At the Closing, the Purchasers shall have received the opinion of Wildman, Harrold, Allen & Dixon LLP, as counsel to the Company, dated as of Closing in form and substance acceptable to the Purchaser and counsel to the Company.

SECTION 7

Conditions to Closing of the Company

The Company's obligation to sell and issue the Shares at the Closing is, at the option of the Company, subject to the fulfillment as of the Closing of the following conditions:

7.1. Representations. The representations and warranties made by Purchaser herein shall be true and correct in all material respects on the dates made and on the date of Closing.

7.2. Performance by Purchaser. Purchaser shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Agreements to be performed, satisfied or complied with by Purchaser at or before the Closing.

7.3. No Injunction. No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated, endorsed or threatened or is pending by or before any Governmental Authority of competent jurisdiction which prohibits or threatens to prohibit the consummation of any of the transactions contemplated by the Agreements.

SECTION 8

Miscellaneous

8.1. Governing Law. This Agreement shall be governed in all respects by the laws of the State of Delaware, without reference to its conflict of laws principles.

8.2. Survival. The representations, warranties, covenants and agreements made herein shall survive any investigation made by Purchaser and the closing of the transactions contemplated hereby.

8.3. Successors and Assigns. Except as otherwise provided herein, the provisions hereof shall inure to the benefit of, and be binding upon, the successors, assigns, heirs, executors and administrators of the parties hereto, *provided that* the rights of Purchaser to purchase the Shares shall not be assignable without the consent of the Company.

8.4. Notices, etc. All notices and other communications required or permitted hereunder shall be in writing and shall be mailed by United States mail, postage prepaid, by reliable overnight delivery service such as UPS or FedEx, or by facsimile transmission, or otherwise delivered by hand or by

messenger, addressed (a) if to Purchaser, at the Purchaser's address set forth below, or at such other address as Purchaser shall have furnished to the Company in writing, or (b) if to any other holder of any shares, at such address as such holder shall have furnished the Company in writing, or, until any such holder so furnishes an address to the Company, then to and at the address of the last holder of such shares who has so furnished an address to the Company, or (c) if to the Company, one copy should be sent to the Company at the address listed below, in each case with a copy to Purchaser at the address indicated below.

Company:

Nanophase Technologies Corporation
1319 Marquette Drive
Romeoville, Illinois 60446
Attention: Joseph Cross
Facsimile: (630) 323-1221

with a copy to:

Company Counsel:

Wildman, Harrold, Allen & Dixon LLP
225 West Wacker Drive
Suite 3000
Chicago, Illinois 60606-1229
Attention: David Weinstein

Purchaser:

Altana Chemie AG
Abelstrasse 45
46483 Wesel, Germany
Facsimile: +49 281 670 719
Attention: Mr. Martin Babilas

with a copy to:

Altana AG
Herbert-Quandt-Haus
am Pilgerrain 15
61352 Bad Homburg v.d. Höhe, Germany
Facsimile: +49 (6172) 1712 270
Attention: Mr. Volker Mansfeld

Each such notice or other communication shall for all purposes of this Agreement be treated as effective or having been given when delivered, or if by facsimile transmission, as indicated by the facsimile imprint date.

8.5. Delays or Omissions. Except as expressly provided herein, no delay or omission to exercise any right, power or remedy accruing to Purchaser upon any breach or default of the Company under the Agreements shall impair any such right, power or remedy of Purchaser, nor shall it be construed to be a waiver of any such breach or default, or an acquiescence therein, or of any similar breach or default

thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. Any waiver, permit, consent or approval of any kind or character on the part of Purchaser of any breach or default under this Agreement, or any waiver on the part of any party hereto of any provisions or conditions of this Agreement, must be in writing and shall be effective only to the extent specifically set forth in such writing. All remedies, either under this Agreement or by law or otherwise afforded to Purchaser, shall be cumulative and not alternative.

8.6. Expenses. The Company and Purchaser shall each bear their own legal and other expenses with respect to this Agreement.

8.7 Counterparts. This Agreement may be executed in two or more identical counterparts and by facsimile, each of which shall be deemed an original and all of which shall constitute one and the same agreement. Any signature that is delivered by facsimile transmission shall be valid and binding, with the same force and effect as if an original, manually signed counterpart.

8.8. Severability. In the event that any provision of this Agreement is unenforceable, the remaining provisions shall continue in full force and effect.

8.9. Section Headings, etc. The titles and subtitles used in this Agreement are used for convenience only and are not considered in construing or interpreting this Agreement. As used herein, any gender shall include all other genders, and the singular shall include the plural and vice versa. The terms "include," "including" and similar terms shall mean include without limitation, whether by enumeration or otherwise.

8.10. No Third-Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective permitted successors and assigns, and no other person is intended to or shall have any rights hereunder whether as a third party beneficiary or otherwise.

8.11. Further Assurances. Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other parties may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

8.12. Confidentiality. All material, non-public information disclosed by the Company to Purchaser pursuant to this Agreement or otherwise shall be held strictly confidential and used by Purchaser solely for evaluating purchases of Shares in this Offering, *provided* this obligation shall not apply to any information that is generally available to the public or becomes available to the public without any disclosure by Purchaser. The provisions of this Section 8.12 shall not in any way amend or supercede the provisions of any other confidentiality, non-disclosure or similar agreement with the Company to which Purchaser is bound.

8.13. Entire Agreement; Amendment. This Agreement and the Registration Rights Agreement and the other documents contemplated therein constitute the entire understanding and agreement between Purchaser and the Company with regard to the subject matter. Except as expressly provided herein, this Agreement, any of the other Agreements or any term hereof may be amended, modified, waived or discharged only by a written instrument signed by the party waiving any term, condition, or right or remedy that benefits it hereunder.

8.14. Public Statements or Releases. Neither the Company nor any Purchaser shall make any public announcement with respect to the existence or terms of this Agreement or the transactions

provided for herein without the prior approval of the other parties, which shall not be unreasonably withheld or delayed. Notwithstanding the foregoing, nothing in this Section 8.14 shall prevent any party from making any public announcement it considers necessary in order to satisfy its obligations under the law or the rules of any national securities exchange or Nasdaq; provided such party, to the extent practicable, provides the other parties with an opportunity to review and comment on any proposed public announcement before it is made.

[Signature Pages to Follow]

IN WITNESS WHEREOF, the undersigned have executed this Stock Purchase Agreement as of the day and year first set forth above.

Altana Chemie AG
a German corporation

By: /s/ Matthias L. Wolfgruber

Dr. Matthias L. Wolfgruber,
President & CEO

By: /s/ Martin Babilas

Martin Babilas,
Vice President Strategic Business Development

Nanophase Technologies Corporation

By: /s/ Joseph Cross

Joseph Cross, CEO

Exhibit 4.11

REGISTRATION RIGHTS AGREEMENT

THIS REGISTRATION RIGHTS AGREEMENT (the "Agreement") is made and entered into as of March 23, 2004, by and between NANOPHASE TECHNOLOGIES CORPORATION, a Delaware corporation located at 1319 Marquette Drive, Romeoville, Illinois (the "Company"), and Altana Chemie AG, a German corporation (the "Purchaser").

This Agreement is made pursuant to the Stock Purchase Agreement, dated on or about the date hereof (the "Stock Purchase Agreement"), by and between the Company and Purchaser, pursuant to which the Company is issuing and selling up to 1,256,281 shares of its common stock, US$.01 par value per share (the "Common Stock" or the "Shares") to Purchaser.

The Shares are being offered and sold to Purchaser without registration under the Securities Act of 1933, as amended (the "Securities Act"), in reliance upon the exemption from registration provided by Section 4(2) of the Securities Act and the provisions of Rule 506 of Regulation D, promulgated under the Securities Act. In order to induce Purchaser to enter into the Stock Purchase Agreement, the Company has agreed to provide to Purchaser (and their direct and indirect permitted transferees, if any) the registration rights set forth in this Agreement with respect to the resale of the Shares. The execution and delivery of this Agreement is a condition to the Closing under the Stock Purchase Agreement. Capitalized terms used but not defined herein shall have the meaning provided in the Stock Purchase Agreement.

In consideration of the foregoing premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties, intending to be legally bound, agree as follows:

SECTION 1

Registration Rights

1.1. Filing of Form S-3 Resale Registration Statement. As soon as practicable following the second anniversary of the date hereof, the Company shall file with the Securities and Exchange Commission (the "SEC" or the "Commission") a registration statement on Form S-3 pursuant to Rule 415 under the Securities Act, or, in the event that Form S-3 is unavailable to the Company, a registration statement on such other SEC Form that is available to the Company (together with any exhibits, amendments or supplements thereto, and any documents incorporated by reference therein, the "Registration Statement"), with respect to the resale of the Shares, and any securities of the Company issued as a dividend or other distribution with respect to, or in exchange for or in replacement of, the Shares. The securities described in the preceding sentence are collectively referred to herein as the "Registrable Securities;" *provided*, *that* the term "Registrable Securities" shall not include securities transferred to a person other than a permitted transferee.

1.2. Effectiveness of Registration Statement. The Company shall, subject to Section 6 hereof, use its best efforts to cause the Registration Statement to become effective as soon as practicable and in no event later than three (3) months after the date of filing of the Registration Statement, and shall use its commercially reasonable best efforts to keep the Registration Statement continuously effective from the date such Registration Statement becomes effective until the earlier of (i) the date on which all Shares have been resold under such Registration Statement and (ii) the date on which all Registrable Securities

may be resold without restriction or limitation. The obligations under this Section will not apply to any delay or complication caused in whole or in part by Purchaser.

1.3. Supplements; Amendments. Subject to Section 6 hereof, the Company shall supplement or amend the Registration Statement, (i) as required by Form S-3, including, without limitation, the instructions applicable to Form S-3, or by the Securities Act, the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or the rules and regulations promulgated under the Securities Act or the Exchange Act, respectively, and (ii) to include in the Registration Statement any additional securities that become Registrable Securities by operation of the definition thereof. The Company shall furnish to the holders of the Registrable Securities, or their permitted transferees, as appropriate (collectively, the "Holders"), to which the Registration Statement relates copies of any such supplement or amendment sufficiently in advance (but in no event less than five (5) business days in advance) of its use and/or filing with the Commission to allow the Holders a meaningful opportunity to comment thereon with respect to the information contained therein regarding the Holders and any plan for resale of the Registrable Securities. The Holders acknowledge or shall acknowledge that they have supplied the information regarding themselves and their plan of resale in the Registration Statement within five (5) business days prior to the filing of the Registration Statement and hereby waive or shall waive any notice of the initial filing of the Registration Statement, and such Holders and their successors and assigns shall promptly notify the Company of any changes in such information.

SECTION 2

Expenses

The Company shall pay all expenses, fees and costs incurred in connection with the preparation, filing, distribution and effectiveness of the Registration Statement and any supplements or amendments thereto, whether or not the Registration Statement becomes effective, and whether all, none or some of the Registrable Securities are sold pursuant to the Registration Statement, including, without limitation, all registration and filing fees, printing expenses, fees and disbursements of counsel for the Company, fees and state securities, or "blue sky," fees and expenses, and the expense of any special audits incident to or required by, or in connection with the filing and effectiveness of the Registration Statement. The Holders shall pay all underwriting fees and discounts, selling commissions, brokerage fees and stock transfer taxes applicable to the Registrable Securities sold by such Holder and the fees and expenses of their counsel, if any.

SECTION 3

Registration Procedures

3.1. Registration. The Company will advise the Holders as to the status of the preparation, filing and effectiveness of the Registration Statement and, at the Company's expense, will do the following:

(a) furnish to each Holder a copy of the Registration Statement (including all exhibits thereto) and any prospectus forming a part thereof and any amendments and supplements thereto (including all documents incorporated or deemed incorporated by reference therein prior to the effectiveness of the Registration Statement and including each preliminary prospectus) and any other prospectus filed under Rule 424 under the Securities Act, which documents, other than documents incorporated or deemed incorporated by reference, will be subject to the review of the Holders and any such underwriter for a period of at least three (3) business days, and the Company shall not file the Registration Statement or such prospectus or any amendment or

supplement to the Registration Statement or prospectus if any Holder shall reasonably object within three (3) business days after the receipt thereof. A Holder shall be deemed to have reasonably objected to such filing only if the Registration Statement, amendment, prospectus or supplement, as applicable, as proposed to be filed, contains a material misstatement or omission with respect to such Holder or its plan of resale;

(b) furnish to each Holder one conformed copy of the Registration Statement and of each amendment and supplement thereto (in each case including all exhibits) and such number of copies of the prospectus forming a part of the Registration Statement (including each preliminary prospectus) and any other prospectus filed under Rule 424 under the Securities Act, in conformity with the requirements of the Securities Act, and such other documents, including, without limitation, documents incorporated or deemed to be incorporated by reference prior to the effectiveness of such Registration Statement, as each of the Holders or any such underwriter, from time to time may reasonably request;

(c) to the extent practicable, promptly upon the filing of any document that is to be incorporated by reference into the Registration Statement or prospectus forming a part thereof subsequent to the effectiveness thereof, and in any event no later than five (5) business days after such document is filed with the Commission, provide copies of such document to the Holders, if requested, and make representatives of the Company available for discussion of such document and other customary due diligence matters; and provide promptly to the Holders upon request any document filed by the Company with the Commission pursuant to the requirements of Section 13 and Section 15 of the Exchange Act;

(d) make available at reasonable times for inspection by the Holders, and any attorney, accountant, financial adviser or other representative (collectively, "Representatives") retained by the Holders, subject to the recipient's prior written agreement to keep such information confidential and not use or disclose it, all financial and other records, pertinent corporate documents and properties of the Company and cause the officers, directors and employees of the Company to supply all information reasonably requested by the Holders or their respective Representatives in connection with the preparation, filing and effectiveness of the Registration Statement;

(e) use its commercially reasonable best efforts (i) to register or qualify all Registrable Securities covered by the Registration Statement under state securities, or "blue sky," laws of such States of the United States of America where required and where an exemption is not available and as the Holders of Registrable Securities covered by the Registration Statement shall reasonably request, (ii) to keep such registration or qualification in effect for so long as the Registration Statement is required to be effective hereunder, and (iii) to take any other action which may be reasonably necessary or advisable to enable the Holders to consummate the disposition of the securities to be sold by the Holders in such jurisdictions, consistent with the plan of distribution described in the prospectus included in the Registration Statement, except that the Company shall not for any such purpose be required to qualify generally to do business as a foreign corporation in any jurisdiction where it is not so qualified, or to execute a general consent to service of process in effecting such registration, qualification or compliance, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act or applicable rules or regulations thereunder;

(f) use its commercially reasonable best efforts to cause all Registrable Securities covered by the Registration Statement to be registered or qualified with or approved by all other applicable Governmental Authorities as may be necessary, in the opinion of counsel to the

Company and counsel to the Holders of Registrable Securities, to enable the Holders thereof the consummate the disposition of such Registrable Securities;

(g) subject to Section 6 hereof, promptly notify each Holder of Registrable Securities covered by the Registration Statement (i) upon discovery that, or upon the occurrence of any event as a result of which, the prospectus forming a part of the Registration Statement, as then in effect, includes an untrue statement of a material fact or omits to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, (ii) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or the initiation of proceedings for that purpose, (iii) of any request by the Commission for (A) amendments to the Registration Statement or any document incorporated or deemed to be incorporated by reference in the Registration Statement, or (B) supplements to the prospectus forming a part of the Registration Statement, or (C) additional information, or (iv) of the receipt by the Company of any notification with respect to the suspension of the registration, qualification or exemption from registration or qualification of any of the Registrable Securities for sale in any jurisdiction or the initiation of any proceeding for such purpose, and at the request of any such Holder promptly prepare and file an amendment to the Registration Statement or a supplement to the prospectus as the Company may deem necessary so that, as thereafter delivered to the purchasers of such securities, such prospectus shall not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; and furnish to each Holder a reasonable number of copies of such supplement to, or amendment of, such registration statement and prospectus, and, in the event of a stop order, use its commercially reasonable best efforts to obtain the withdrawal of any order suspending the effectiveness of any the Registration Statement, or the lifting of any suspension of the qualification (or exemption from qualification) of any of the Registrable Securities for sale in any jurisdiction;

(h) if reasonably requested by any Holder or if required by law or SEC or other applicable rule or regulation, promptly incorporate in the Registration Statement such appropriate information as the Holder may reasonably request to have included therein by filing a Form 8-K, or filing a supplement to the prospectus, to reflect any change in the information regarding the Holder, and make all required filings with the Commission in respect of any offer or sale of Registrable Securities or any amendment or supplement to the Registration Statement or related prospectus;

(i) otherwise use its commercially reasonable best efforts to comply with all applicable rules and regulations, and make available to its security holders, as soon as reasonably practicable, an earnings statement covering the period of at least 12 months, but not more than 18 months, beginning with the first full calendar month after the effective date of the Registration Statement, which earnings statement shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 promulgated thereunder and to provide promptly to the Holders upon request any document filed by the Company with the Commission pursuant to the requirements of Section 13 and Section 15 of the Exchange Act; and

(j) use its commercially reasonable best efforts to cause all Registrable Securities included in the Registration Statement to be listed on Nasdaq and each securities exchange on which securities of the same class are then listed, or, if not then listed on any securities exchange or Nasdaq, to be eligible for trading in any over-the-counter market or trading system in which securities of the same class are then traded.

SECTION 4

Indemnification

4.1. Indemnification by the Company. The Company will indemnify:

(a) each of the Holders, as applicable,

(b) each of the Holder's officers, directors, members and partners, and

(c) each individual, partnership, joint stock company, corporation, trust, unincorporated organization, government agency or political subdivision (each of the foregoing, a "Person") controlling each of the Holders within the meaning of SEC Rule 405 under the Securities Act,

with respect to the Registration Statement, against all expenses, claims, losses, damages and liabilities (or actions, investigations or proceedings in respect thereof) (collectively, a "Claim") arising out of or based on any actual or alleged untrue statement of a material fact, or any omission of a material fact required to be stated therein or necessary in order to make the statements included therein not misleading, contained in the Registration Statement, any prospectus or other offering document (including any related registration statement, notification or the like) incident to the registration, qualification or compliance, or any violation by the Company of the Securities Act or the Exchange Act or any other laws or any rule or regulation thereunder applicable to the Company and relating to action or inaction required of the Company in connection with any such registration, qualification or compliance, and will reimburse each of the Holders, each of its officers, directors, members and partners, and each Person controlling each of the Holders, for any legal and any other expenses reasonably incurred in connection with investigating and defending any such Claim; *provided, however,* that the Company will not be liable in any such case to the extent that any such Claim (i) arises out of or is based on any untrue statement or omission based upon written information furnished to the Company by the Holders or their Representatives and stated to be specifically for use therein, or (ii) is finally judicially determined to have resulted primarily from the gross negligence or willful misconduct of any person or entity set forth in subsections (a) through (c) above.

4.2. Indemnification by the Holders. Each of the Holders will, if Registrable Securities held by it are included in the securities as to which such Registration Statement is being effected, indemnify the Company, each of its directors and officers, and each Person who "controls" the Company within the meaning of SEC Rule 405 under the Securities Act, against all Claims arising out of or based on any actual or alleged untrue statement of a material fact, or any omission or a material fact required to be stated therein or necessary in order to make the statement included or incorporated therein not misleading, contained in the Registration Statement, prospectus, or other offering document made by or on behalf of such Holder, and will reimburse the Company, its directors, officers, partners, members or control Persons for any legal or any other expenses reasonably incurred in connection with investigating and defending any such Claim, in each case to the extent, but only to the extent, that such untrue statement (or alleged untrue statement) or omission (or alleged omission) is made in the Registration Statement, prospectus or other document in reliance upon and in conformity with written information furnished to the Company by or on behalf of such Holder and stated to be specifically for use therein; *provided, however,* that the obligations of each of the Holders hereunder shall be limited to an amount equal to the net proceeds received by such Holder from the sale of the Registrable Securities pursuant to the Registration Statement.

4.3. Procedures. Each party entitled to indemnification under this Agreement (each, an "Indemnified Party") shall give notice to the party required to provide indemnification (the "Indemnifying Party") promptly after such Indemnified Party has actual knowledge of any Claim as to which indemnity may be sought, and shall permit the Indemnifying Party to assume the defense of any such Claim; *provided that* counsel for the Indemnifying Party, who shall conduct the defense of such Claim, shall be approved by the Indemnified Party (whose approval shall not unreasonably be withheld), and the Indemnified Party may participate in such defense at such party's expense (unless the Indemnified Party shall have reasonably concluded that there may be a conflict of interest between the Indemnifying Party and the Indemnified Party in such action, in which case the fees and expenses of one such counsel for all Indemnified Parties shall be at the expense of the Indemnifying Party), and *provided further* that the failure of any Indemnified Party to give notice as provided herein shall not relieve the Indemnifying Party of its obligations under this Agreement unless the Indemnifying Party is materially prejudiced thereby. No Indemnifying Party, in the investigation or defense of any such Claim shall, except with the consent of each Indemnified Party (which consent shall not be unreasonably withheld or delayed), consent to entry of any judgment or enter into any settlement or compromise which does not include an unconditional release of the Indemnified Party from all liability in respect to such Claim. Each Indemnified Party shall furnish such information regarding itself or the Claim in question as an Indemnifying Party may reasonably request in writing and as shall be reasonably required in connection with the investigation and defense of such Claim.

4.4. Contribution. If the indemnification provided for in this Agreement is held by a court of competent jurisdiction to be unavailable to an Indemnified Party with respect to any Claim, then the Indemnifying Party, in lieu of indemnifying such Indemnified Party hereunder, shall contribute to the amount paid or payable by such Indemnified Party as a result of such loss, liability, claim, damage or expense in such proportion as is appropriate to reflect the relative fault of the Indemnifying Party on the one hand and of the Indemnified Party on the other in connection with the statements or omissions which resulted in such Claim, as well as any other relevant equitable considerations; *provided, however,* that the Company will not be liable in any such case to the extent that any such Claim (i) arises out of or is based on any untrue statement or omission based upon written information furnished to the Company by the Holders or their Representatives and stated to be specifically for use therein, or (ii) is finally judicially determined to have resulted primarily from the gross negligence or willful misconduct of any person or entity set forth in Section 4.1(a) through 4.1(c) above. The relative fault of the Indemnifying Party and of the Indemnified Party shall be determined by reference to, among other things, whether the untrue (or alleged untrue) statement of a material fact or the omission (or alleged omission) to state a material fact relates to information supplied by the Indemnifying Party or by the Indemnified Party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission, and provided that each Holder shall not be required to contribute, in the aggregate, more than the net proceeds received by the Holders from the sale of the Registrable Securities pursuant to the Registration Statement.

SECTION 5

Provision of Information by the Holders

Each of the Holders whose Registrable Securities are included in the Registration Statement shall furnish to the Company such information regarding such Holder as the Company may reasonably request in writing and as shall be reasonably required or advisable in connection with any registration, qualification or compliance referred to in this Agreement, and shall promptly notify the Company if such information becomes incorrect or misleading, or requires amendment or updating. Each of the Holders agrees that the plan of distribution included in any prospectus relating to the Registrable Securities shall

be as set forth on Schedule A-1 hereto and that such Holder will not resell any Registrable Securities pursuant to the Registration Statement in any manner other than as provided therein or herein. The other information regarding the Holders required for the initial filing of the Registration Statement has been or will be provided by each Holder. Each Holder represents, warrants and covenants to the Company that the information regarding such Holder that appears in the Stock Purchase Agreement and/or Schedule A-2 is accurate and complete in all material respects consistent with Commission Regulation S-K, Items 507 and 508. The Purchaser will confirm promptly by delivery of a signed copy of Schedule A-2, the sale of any Shares pursuant to Rule 144 or the Registration Statement.

SECTION 6

Holdback; Postponement

Notwithstanding the other provisions of this Agreement, if (a) there is material non-public information regarding the Company which the Company's Board of Directors reasonably and in good faith determines not to be in the Company's best interest to disclose and which the Company is not otherwise required to disclose, or (b) there is a extraordinary business opportunity (including but not limited to the acquisition or disposition of assets (other than in the ordinary course of business) or any merger, consolidation, tender offer or other similar extraordinary transaction not in the ordinary course of business) available to the Company which the Company's Board of Directors reasonably and in good faith determines not to be in the Company's best interest to disclose, then the Company may (upon not less than two trading days prior written notice by same day delivery of fax or hand delivery) postpone or suspend filing or effectiveness of a registration statement for a period not to exceed 45 days, *provided that* the Company may not postpone or suspend filing or effectiveness of a registration statement for more than 90 days in the aggregate during any 365-day period and there shall be an aggregate of not more than two (2) suspensions during any 365-day period; *provided, however* that no postponement or suspension shall be permitted for consecutive 45 day periods arising out of the same set of facts, circumstances or transactions.

SECTION 7

Rule 144 Reporting, Etc.

7.1. SEC Reporting Compliance.

(a) With a view to making available the benefits of certain rules and regulations of the Commission which may at any time permit the sale of the Registrable Securities to the public without registration, through the second anniversary of this Agreement, the Company will:

(i) make and keep "current public information" regarding the Company available, as defined in Commission Rule 144(c) under the Securities Act;

(ii) use its commercially reasonable best efforts to file with the Commission in a timely manner all SEC Reports and other filings and documents required of the Company under the Securities Act and the Exchange Act and otherwise; and

(iii) so long as a Holder owns any Registrable Securities, furnish the Holder forthwith upon request a written statement by the Company as to its compliance with the reporting requirements under the Securities Act and the Exchange Act, including compliance with SEC Rule 144(c), a copy of the most recent annual or quarterly report of the Company, and such other reports and documents of the Company and other information in the possession of, or

reasonably obtainable by, the Company as a Holder may reasonably request in availing itself of any rule or regulation of the Commission allowing a Holder to sell any such securities without registration.

(b) The Company shall file the reports required to be filed by it under the Exchange Act and shall comply with all other requirements set forth in the instruction to Form S-3 in order to allow the Company to be eligible to file registration statements on Form S-3.

7.2. Stock Purchase Agreement Covenants. The Company will comply with its covenants under Section 4 of the Stock Purchase Agreement, which are incorporated herein by this reference.

SECTION 8

Miscellaneous

8.1. Assignment. The registration rights set forth herein may be assigned, in whole or in part, to any transferee of Registrable Securities permitted in accordance with the Stock Purchase Agreement, which transferee, upon registration on the Company's or its transfer agent's books and records as a holder of record of Registrable Securities, shall be considered thereafter to be a Holder (provided that any transferee who is not an affiliate of Purchaser shall be a Holder only with respect to such Registrable Securities so acquired and any stock of the Company issued as a dividend or other distribution with respect to, or in exchange for or in replacement of, such Registrable Securities) and shall be bound by all obligations and limitations of this Agreement and the Stock Purchase Agreement.

8.2. Section Headings. The titles and headings of the sections and subsections of this Agreement are inserted for convenience only and shall not be deemed to constitute a part thereof.

8.3. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware.

8.4. Notices.

(a) All communications under this Agreement shall be in writing and shall be delivered by facsimile, by hand, by reliable overnight delivery service such as UPS or FedEx or by registered or certified mail, postage prepaid:

(i) if to the Company, to Nanophase Technologies Corporation, 1319 Marquette Drive, Romeoville, Illinois 60446, Facsimile: (630) 771-0825, Attention: Joseph Cross, or at such other address as it may have furnished in writing to Purchaser;

(ii) if to Purchaser, at the addresses listed on Schedule 1 hereto, or at such other addresses as may have been furnished the Company in writing.

(b) Any notice so addressed shall be deemed to be given (i) if delivered by hand, on the date of such delivery, (ii) if sent by reliable overnight delivery service such as UPS or FedEx, on the first business day following the date of delivery to such service for overnight delivery, (iii) if delivered by facsimile, on the date of such facsimile, or (iv) if mailed by registered or certified mail, on the third business day after the date of such mailing.

8.5. Successors and Assigns; No Third Party Beneficiaries. This Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of each of the parties. No other

person is intended to or shall have any rights or remedies hereunder, whether as a third part beneficiary or otherwise.

8.6. Counterparts. This Agreement may be executed in one or more identical counterparts, each of which shall be deemed an original and all of which shall be one and the same agreement. Any signature that is delivered by facsimile signature page shall be valid and binding, with the same force and effect as if an original, manually signed counterpart.

8.7. Remedies. Each Holder of Registrable Securities, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Agreement. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Agreement and hereby agrees to waive the defense in any action for specific performance that a remedy at law would be adequate.

8.8. Severability. In the event that any provision contained herein is unenforceable, the remaining provisions shall continue in full force and effect.

8.9. Delays or Omissions. It is agreed that no delay or omission to exercise any right, power or remedy accruing to the Holders, upon any breach or default of the Company under this Agreement, shall impair any such right, power or remedy, nor shall it be construed to be a waiver of any provision hereof, or of any similar breach or default thereafter occurring; nor shall any wavier of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. It is further agreed that any waiver, permit, consent or approval of any kind or character by a Holder of any breach or default under this Agreement, or any waiver by a Holder of any provisions or conditions of this Agreement, must be in writing and shall be effective only to the extent specifically set forth in the writing, and that all remedies, either under this Agreement, or by law or otherwise afforded to a Holder, shall be cumulative and not alternative.

8.10. Attorney's Fees. If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, costs and necessary disbursements in addition to any other relief to which such party may be entitled.

8.11. Entire Agreement; Amendment. This Agreement and the Stock Purchase Agreement and the other documents contemplated therein constitute the entire understanding and agreement of the parties with respect to the subject matter hereof and supersede all prior understandings, written or otherwise, among such parties. This Agreement may be amended only in a writing signed by the Company and the Holders of a majority of the then outstanding Registrable Securities.

[Signature Pages to Follow]

IN WITNESS WHEREOF, the undersigned have executed this Registration Rights Agreement as of the day and year first set forth above.

Altana Chemie AG
a German corporation

By: /s/ Matthias L. Wolfgruber

Matthias L. Wolfgruber
President & CEO

By: /s/ Martin Babilas

Martin Babilas
Vice President Strategic Business Development

Nanophase Technologies Corporation

By: /s/ Joseph Cross

Joseph Cross, CEO

Plan of Distribution

Any or all of the shares offered by the selling stockholders may be offered for sale and sold by, or on behalf of, the selling stockholders from time to time in varying amounts, including in block transactions, on the Nasdaq Stock Market, or the over-the-counter market, in privately negotiated transactions, though put or call options transactions relating to the shares, through short sales, or a combination of such methods of sale, at prices prevailing in such market or as may be negotiated at the time of the sale. The shares may be sold by the selling stockholders directly to one or more purchasers, through agents designated from time to time or to or through broker-dealers designated from time to time. In the event the shares are publicly offered through broker-dealers or agents, the selling stockholders may enter into agreements with respect thereto. Such broker-dealers or agents may receive compensation in the form of discounts, concessions or commissions from the selling stockholders, and any such broker-dealers or agents that participate in the distribution of the shares may be deemed to be underwriters within the meaning of the Securities Act, and any profit on the sale of the shares by them and any discounts and commissions might be deemed to be underwriting discounts or commissions under the Securities Act. Any such broker-dealers and agents may engage in transactions with, and perform services for, the Company. At the time a particular offer of shares is made by the selling stockholders, to the extent required, a prospectus supplement will be distributed which will set forth the aggregate number of shares being offered, and the terms of the offering, including the public offering price thereof, the name or names of any broker-dealers or agents, any discounts, commissions and other items constituting compensation from, and the resulting net proceeds to, the selling stockholders.

As used herein, “selling stockholders” includes donees and pledgees selling shares received from a named selling shareholder after the date of this prospectus.

Selling stockholders also may resell all or a portion of the shares in open market transactions in reliance on Rule 144 under the Securities Act, provided they meet the criteria and conform to the requirements of such rule.

In order to comply with the securities laws of certain states, sales of shares offered hereby to the public in such states may be made only through broker-dealers who are registered or licensed in such states. Sales of shares offered hereby must also be made by the selling stockholders in compliance with other applicable state securities laws and regulations.

IN WITNESS WHEREOF, the undersigned have executed this Registration Rights Agreement as of the day and year first set forth above.

Altana Chemie AG
a German corporation

By: /s/ Gerd Büscher

Gerd Büscher
Chief Financial Officer

By: /s/ Martin Babilas

Martin Babilas
Vice President Strategic Business Development

Nanophase Technologies Corporation

By: /s/ Joseph Cross

Joseph Cross, CEO

Exhibit 10.26

EMPLOYMENT AGREEMENT

Employment Agreement dated and effective as of February 17, 2000 (this "Agreement"), between NANOPHASE TECHNOLOGIES CORPORATION, a Delaware corporation (with its successors and assigns, referred to as the "Company"), and Jess Jankowski (referred to as "Executive").

Preliminary Statement

The Company desires to continue employing Executive, and Executive wishes to continue being employed by the Company, upon the terms and subject to the conditions set forth in this Agreement, all of which are related to Executive's employment with the Company. Executive and the Company therefore agree as follows:

Agreement

1. Employment for Term. The Company hereby employs Executive, and Executive hereby accepts employment with the Company, beginning on the date of this Agreement and continuing until terminated pursuant to Section 6 below (the "Term").

2. Position and Duties. During the Term, Executive shall serve as the Controller and acting CFO of the Company and shall report to the President or Chief Executive Officer of the Company. During the Term, Executive shall also hold such additional positions and titles as the Board of Directors of the Company (the "Board") may determine from time to time. During the Term, Executive shall devote substantially all of his business time and best efforts to Executive's duties as an employee and officer of the Company.

3. Compensation.

(a) **Base Salary.** The Company shall pay Executive a base salary, beginning on the first day of the Term and ending on the last day of the Term, of not less than $95,000 per annum, payable on the Company's regular pay cycle for professional employees.

(b) **Bonus Payment.** Executive will be eligible for bonuses for services to be performed as an officer and employee of the Company in calendar year 1999 and subsequent years based on the Company's current compensation plan and performance milestones agreed upon by Executive and the Chief Executive Officer of the Company and approved by the Board.

(c) **Stock Options.** Subject to the provisions of the Company's Amended and Restated 1992 Stock Option Plan ("Plan"), and as determined by the Board in its sole discretion, Executive shall be eligible for such annual stock option grants as the Chief Executive Officer and Board deems appropriate.

(d) **Other and Additional Compensation.** Sections 3(a), 3(b) and 3(c) establish minimum salary, bonus and option grant levels for Executive during the Term, and shall not preclude the Board from awarding Executive a higher salary or more stock options at any time, nor shall they preclude the Board from awarding Executive additional bonuses or other compensation in the discretion of the Board.

4. Employee Benefits. During the Term, Executive shall be entitled to the employee benefits made available by the Company generally, to all other employees of the Company, and shall be entitled to four (4) weeks of vacation annually, subject to adjustment based on subsequent changes in the Company's vacation policy in effect from time to time applicable to the Company's officers generally.

5. Expenses. The Company shall reimburse Executive for actual out-of-pocket expenses reasonably incurred by him in the performance of his services as an officer and employee of the Company in accordance with the Company's policy for such reimbursements applicable to employees generally, and upon receipt by the Company of appropriate documentation and receipts for such expenses.

6. Termination.

(a) **General.** The Term shall end (i) immediately upon Executive's death, or (ii) upon Executive becoming disabled (within the meaning of the Americans With Disabilities Act of 1991, as amended) and unable to perform fully all essential functions of his job, with or without reasonable accommodation, for a period of 150 calendar days. Either Executive or the Company may end the Term at any time for any reason or no reason, with or without Cause, in the absolute discretion of Executive or the Board (but subject to each party's obligations under this Agreement), provided that Executive will provide the Company with at least thirty (30) days' prior written notice of Executive's resignation from Executive's positions as an officer and employee with the Company. Upon receipt of such written notice, the Company, in its sole discretion, may accelerate the effective date of the resignation to such date as the Company deems appropriate, provided that Executive shall receive the compensation required under Section 3 of this Agreement for a full thirty (30) day period.

(b) **Notice of Termination.** If the Company ends the Term, it shall give Executive at least thirty (30) days prior written notice of the termination, including a statement of whether the termination was for "Cause" (as defined in Section 7(a) below). Upon delivery of such written notice, the Company, in its sole discretion, may accelerate the effective date of such termination to such date as the Company deems appropriate, provided that Executive shall receive the compensation required under Section 3 of this Agreement for a full thirty (30) day period. The Company's failure to give notice under this Section 6(b) shall not, however, affect the validity of the Company's termination of the Term or Executive's employment, nor shall the lack of such notice entitle Executive to any rights or claims against the Company other than those arising from Executive's right to receive the compensation required under Section 3 of this Agreement for a full thirty (30) day period.

7. Severance Benefits.

(a) **"Cause" Defined.** "Cause" means (i) willful and gross malfeasance or misconduct by Executive in connection with Executive's employment; (ii) Executive's gross negligence in performing any of Executive's duties under this Agreement; (iii) Executive's conviction of, or entry of a plea of guilty or nolo contendere with respect to, any felony or misdemeanor reflecting upon Executive's honesty; (iv) Executive's gross and willful breach of any written policy applicable to all employees adopted by the Company concerning conflicts of interest, political contributions, standards of business conduct or fair employment practices, procedures with respect to compliance with securities laws or any similar matters, or adopted pursuant to the requirements of any government contract or regulation; or (v) breach by Executive of any of the material terms or conditions of this Agreement.

(b) **Termination without Cause.** If the Company ends the Term other than for Cause, or if the Term ends due to Executive's death or disability under Section 6(a) of this Agreement, subject to Executive's complying with his obligations under this Agreement, (i) the Company shall pay Executive an amount equal in annual amount to Executive's base salary in effect at the time of termination during the period (the "Severance Period") of twenty-six (26) full weeks after the effective date of termination, payable in proportionate amounts on the Company's regular pay cycle for professional employees and (if the last day of the Severance Period is not the last day of a pay period) on the last day of the Severance Period, and (ii) any stock options granted to Executive prior to termination shall become fully vested, and shall become exercisable (by Executive, or upon his death or disability, by his heirs, beneficiaries and personal representatives) in accordance with the applicable option grant agreement and the Plan.

(c) **Termination for Any Other Reason.** If the Company ends the Term for Cause, or if Executive resigns as an employee or officer of the Company, then the Company shall have no obligation to pay Executive any amount, whether for salary, benefits, bonuses, or other compensation or expense reimbursements of any kind, accruing after the end of the Term, and such rights shall, except as otherwise required by law (or, with respect to the Options, as set forth in the Plan or the applicable option grant agreements), be forfeited immediately upon the end of the Term.

8. Additional Covenants.

(a) **Confidentiality.** Executive agrees to execute the Company's standard form of Confidential Information and Proprietary Rights Agreement promptly upon execution of this Agreement.

(b) **"Non-Competition Period" Defined.** "NonCompetition Period" means the period beginning at the end of the Term and ending two years thereafter.

(c) **Covenants of Non-Competition and NonSolicitation.** Executive acknowledges that his services pursuant to this Agreement are unique and extraordinary, that the Company relies upon Executive for the development and growth of its business and related functions, and that he will develop personal relationships with significant customers and suppliers of the Company and have control of confidential information concerning, and lists of customers of, the Company. Executive further acknowledges that the business of the Company is international in scope and cannot be confined to any particular geographic area. For the

foregoing reasons, and in consideration of the benefits available to Executive under Sections 3, 6(a) and 7(b) of this Agreement, Executive covenants and agrees that during both the Term of this Agreement and the subsequent Non-Competition Period, Executive shall not, in any manner, directly or indirectly, engage in, be financially interested in, represent, render any advice or services to, or be employed by, or otherwise affiliated with, any other business (conducted for profit or not for profit) which is principally or materially engaged in or is competitive with the Company's business of developing, producing, coating, refining, forming, marketing, supplying or selling nanocrystalline and ultrafine powders. For the reasons acknowledged by Executive at the beginning of this Section 8(c), Executive additionally covenants and agrees that during the NonCompetition Period, Executive shall not, directly or indirectly, whether on his own behalf or on behalf of any other person or entity, in any manner (A) contact, accept or solicit the business of any person or entity that was a customer, supplier or contractor of or to the Company for the purpose of obtaining business of the type performed by the Company; or (B) contact, accept or solicit or attempt to solicit for employment or engagement any persons who were officers or employees of the Company upon the date of termination of his employment or at any time during a 180 day period preceding the date of termination, or aid any person or entity in any attempt to hire or engage any such officers or employees of the Company. The foregoing restrictions shall not preclude Executive from the ownership of not more than three percent (3%) of the voting securities of any corporation whose voting securities are registered under Section 12(g) of the Securities Exchange Act of 1934, even if its business competes with that of the Company.

(d) **Remedies.**

(i) **Injunction.** In view of Executive's access to the Company's confidential information, and in consideration of the value of such property to the Company, Executive acknowledges that the covenants contained in this Section 8 are necessary to protect the Company's interests in its proprietary information and trade secrets and to protect and maintain customer and supplier relationships, both actual and potential, which Executive would not have had access to or involvement in but for his employment with the Company. Executive confirms that enforcement of the covenants in Section 8 will not prevent him from earning a livelihood. Executive further agrees that in the event of his actual or threatened breach of any covenant in this Section 8, the Company would be irreparably harmed and the full extent of resulting injury would be impossible to calculate, and the Company therefore will not have an adequate remedy at law. Accordingly, Executive agrees that temporary and permanent injunctive relief are appropriate remedies for any such breach, without bond or security; provided that nothing herein shall be construed as limiting any other legal or equitable remedies available to the Company.

(ii) **Enforcement.** Executive shall pay all costs and expenses (including, without limitation, court costs, investigation costs, expert witness and attorneys' fees) incurred by the Company in connection with the Company's successfully enforcing its rights under this Agreement. The Company shall be entitled to disclose the contents of this Agreement or to deliver a copy of it to any person or entity whom the Company believes Executive has solicited in violation of this Agreement.

(iii) **Arbitration.** No dispute arising from Executive's actual or threatened breach of any covenant in this Section 8 shall be subject to arbitration. However, any other dispute or claim arising from any other provision of this Agreement, or relating to Executive's

employment or service as an officer (whether based on statute, regulation, contract, tort or otherwise), shall be submitted to arbitration before a single arbitrator pursuant to the Employment Arbitration Rules of the American Arbitration Association. Any such arbitration shall be conducted in Chicago, Illinois. An arbitration award rendered under this Section 8(d)(iii) shall be final and binding on the parties and may be submitted to any court of competent jurisdiction for entry of a judgment thereon in accord with the Illinois Arbitration Act or the Federal Arbitration Act.

9. Successors and Assigns.

(a) **Executive.** This Agreement is a personal contract, and the rights and interests that this Agreement accords to Executive may not be sold, transferred, assigned, pledged, encumbered, or hypothecated by Executive. Except to the extent contemplated in Sections 7(b) and 7(c) above, Executive shall not have any power of anticipation, alienation or assignment of the payments contemplated by this Agreement, all rights and benefits of Executive shall be for the sole personal benefit of Executive, and no other person shall acquire any right, title or interest under this Agreement by reason of any sale, assignment, transfer, claim or judgment or bankruptcy proceedings against Executive. Except as so provided, this Agreement shall inure to the benefit of and be binding upon Executive and Executive's personal representatives, distributees and legatees.

(b) **The Company.** This Agreement shall be binding upon the Company and inure to the benefit of the Company and its successors and assigns, including but not limited to any person or entity that may acquire all or substantially all of the Company's assets or business or with which the Company may be consolidated or merged. This Agreement shall continue in full force and effect in the event the Company sells all or substantially all of its assets, merges or consolidates, otherwise combines or affiliates with another business, dissolves and liquidates, or otherwise sells or disposes of substantially all of its assets. The Company's obligations under this Agreement shall cease, however, if the successor to the Company, the purchaser or acquiror either of the Company or of all or substantially all of its assets, or the entity with which the Company has affiliated, shall assume in writing the Company's obligations under this Agreement (and deliver an executed copy of such assumption to Executive), in which case such successor or purchaser, but not the Company, shall thereafter be the only party obligated to perform the obligations that remain to be performed on the part of the Company under this Agreement.

10. Entire Agreement. This Agreement and the other agreements referenced herein represent the entire agreement between the parties concerning Executive's employment with the Company and supersedes all prior negotiations, discussions, understandings and agreements, whether written or oral, between Executive and the Company relating to the subject matter of this Agreement. The parties specifically agree that upon the Company's execution of this Agreement, the Company shall have no further obligations of any kind to Executive under any prior employment agreement between the parties, including that certain employment agreement dated July 7, 1999.

11. Amendment or Modification, Waiver. No provision of this Agreement may be amended or waived unless such amendment or waiver is agreed to in writing signed by

Executive and by a duly authorized officer of the Company other than Executive. No waiver by any party to this Agreement of any breach by another party of any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of a similar or dissimilar condition or provision at the same time, any prior time or any subsequent time.

12. Notices. Any notice provided for in this Agreement must be in writing and must be either personally delivered, mailed by first class mail (postage prepaid and return receipt requested), sent by reputable overnight courier service (charges prepaid), or by facsimile to the recipient at the address below indicated:

To the Company:	Nanophase Technologies Corporation 453 Commerce Street Burr Ridge, IL 60521 Attn: Chief Executive Officer Facsimile: (630) 323-1221
To Executive:	Jess Jankowski 1362 Washburn Way Lockport, Illinois 60441

or such other address or facsimile number, or to the attention of such other person as the recipient shall have specified by prior written notice to the sending party. Any notice under this Agreement shall be deemed to have been given when so personally delivered, or one day after deposit, if sent by courier, when confirmed received if sent by facsimile, or if mailed, five days after deposit in the U.S. first-class mail, postage prepaid.

13. Severability. If any provision of this Agreement shall be determined by any court of competent jurisdiction to be unenforceable to any extent, the remainder of this Agreement shall not be affected, but shall remain in full force and effect. If any provision of this Agreement containing restrictions is held to cover an area or to be for a length of time that is unreasonable or in any other way is construed to be too broad or to any extent invalid, such provision shall not be determined to be entirely of no effect; instead, it is the intention of both the Company and Executive that any court of competent jurisdiction shall interpret or reform this Agreement to provide for a restriction having the maximum enforceable area, time period and such other constraints or conditions as shall be enforceable under the applicable law.

14. Survivorship. The respective rights and obligations of the parties hereunder shall survive any termination of this Agreement to the extent necessary to the intended preservation of such rights and obligations.

15. Headings. All descriptive headings of sections and paragraphs in this Agreement are intended solely for convenience of reference, and no provision of this Agreement is to be construed by reference to the heading of any section or paragraph.

16. Withholding Taxes. All salary, benefits, reimbursements and any other payments to Executive under this Agreement shall be subject to all applicable payroll and

withholding taxes and deductions required by any law, rule or regulation of any federal, state or local authority.

17. Applicable Law: Jurisdiction. The laws of the State of Illinois shall govern the interpretation of the terms of this Agreement, without reference to rules relating to conflicts of law.

18. LIMITATION ON CLAIMS. EXECUTIVE AGREES THAT HE WILL NOT COMMENCE ANY ACTION, CLAIM OR SUIT RELATING TO MATTERS ARISING FROM HIS EMPLOYMENT WITH THE COMPANY (IRRESPECTIVE OF WHETHER SUCH ACTION, CLAIM OR SUIT ARISES FROM THE TERMS OF THIS AGREEMENT) LATER THAN SIX MONTHS AFTER THE FIRST TO OCCUR OF (a) THE DATE SUCH CLAIM INITIALLY ARISES OR (b) THE DATE OF TERMINATION OF EMPLOYMENT FOR ANY REASON WHATSOEVER. EXECUTIVE EXPRESSLY WAIVES ANY APPLICABLE STATUTE OF LIMITATION TO THE CONTRARY.

IN WITNESS WHEREOF, the parties hereto have executed this Employment Agreement as of the date first written above.

NANOPHASE TECHNOLOGIES CORPORATION

By: /s/ JOSEPH CROSS

Joseph Cross
Chief Executive Officer

/s/ JESS JANKOWSKI

Jess Jankowski

Exhibit 10.27

EMPLOYMENT AGREEMENT

Employment Agreement dated and effective as of September 26, 2001 (this "**Agreement**"), between NANOPHASE TECHNOLOGIES CORPORATION, a Delaware corporation (with its successors and assigns, referred to as the "**Company**"), and Dr. Richard W. Brotzman, Jr. (referred to as "**Executive**").

Preliminary Statement

The Company desires to continue employing Executive, and Executive wishes to continue to be employed by the Company, upon the terms and subject to the conditions set forth in this Agreement. The Company and Executive also wish to enter into the other covenants set forth in this Agreement, all of which are related to Executive's employment with the Company. In consideration of the mutual promises and covenants stated below, Executive and the Company therefore agree as follows:

Agreement

1. **Employment for Term**. The Company employs Executive, and Executive hereby accepts employment with the Company, beginning on September 26, 2001, and renewing automatically on an annual basis until terminated pursuant to Section 7 below (the "**Term**").

2. **Position and Duties**. During the Term, Executive shall serve as the Vice-President of Research & Development and shall report to the Vice President of Technology & Engineering or such other person as designated by the President of the Company. During the Term, Executive shall also hold such additional positions and titles as the President or the Board of Directors of the Company (the "**Board**") may determine from time to time. During the Term, Executive shall devote substantially all of Executive's business time and best efforts to Executive's duties as an executive of the Company.

3. **Signing Benefits**. In consideration of and in reliance upon Executive's execution of this Agreement, and based entirely upon Executive's acceptance of the duties and obligations to the Company under this Agreement (specifically including, without limitation, Executive's obligations under the covenants in Section 9, and the restrictions in Sections 10 and 11 of the Agreement), the Company shall provide Executive with the following Severance Benefits if the Company ends the Term for reasons other than Cause (as defined in Section 8): (i) the Company shall pay Executive a sum equal in annual amount to Executive's base salary in effect at the time of termination during the period (the "**Severance Period**") of 26 full weeks after the effective date of termination, payable in proportionate amounts on the Company's regular pay cycle for professional employees and (if the last day of the Severance Period is not the last day of a pay period) on the last day of the Severance Period, and (ii) all stock options granted to Executive prior to termination shall become fully vested, and shall become exercisable (by Executive, or upon his death or disability, by his heirs, beneficiaries and personal representatives) in accordance with the applicable option grant agreement and the Company's Equity Compensation Plan (the "Plan") or such predecessor stock option plan as may govern any particular option grant agreement.

4. **Compensation.**

(a) **Base Salary**. The Company shall pay Executive a base salary, beginning on the first day of the Term and ending on the last day of the Term, of not less than $146,250 per annum, payable on the Company's regular pay cycle for professional employees.

(b) **Bonus Payment**. Executive will be eligible for bonuses for services to be performed as an employee of the Company in calendar year 2001 and subsequent years based on performance milestones agreed upon by Executive and the Vice President of Operations of the Company and approved by the Board.

(c) **Stock Options.** Subject to the provisions of the Company's Plan, and as determined by the Board in its sole discretion, Executive shall be eligible for such stock options as the Board deems appropriate.

(d) **Other and Additional Compensation**. Sections 4(a) and 4(b) establish minimum salary and bonus levels for Executive during the Term, and shall not preclude the Board from awarding Executive a higher salary at any time, nor shall they preclude the Board from awarding Executive additional bonuses or other compensation in the discretion of the Board.

5. **Employee Benefits**. During the Term, Executive shall be entitled to the employee benefits made available by the Company generally to all other employees of the Company, and shall be entitled to five (5) weeks of vacation in accord with the Company's vacation policy in effect from time to time.

6. **Expenses**. The Company shall reimburse Executive for actual out-of-pocket expenses reasonably incurred by Executive in performing services as an employee of the Company in accord with the Company's policy for such reimbursements applicable to employees generally, and upon receipt by the Company of appropriate documentation and receipts for such expenses.

7. **Termination.**

(a) **General**. The Term shall end (i) immediately upon Executive' death, or (ii) upon Executive becoming disabled (within the meaning of the Americans With Disabilities Act of 1991, as amended) and unable to perform fully all essential functions of his job, with or without reasonable accommodation, for a period of 150 calendar days. Either Executive or the Company may end the Term at any time for any reason or no reason, with or without Cause, in the absolute discretion of Executive or the Board (but subject to each party's obligations under this Agreement), provided that Executive will provide the Company with at least thirty (30) days' prior written notice of Executive's resignation from Executive's position as an employee with the Company. Upon receipt of such written notice, the Company, in its sole discretion, may accelerate the effective date of the resignation to such date as the Company deems appropriate, provided that Executive shall receive the compensation required under Section 4(a) of this Agreement for a full thirty (30) day period.

(b) **Notice of Termination**. If the Company ends the Term, it shall give Executive at least thirty (30) days prior written notice of the termination, including a statement of whether the termination was for "Cause" (as defined in Section 8(a) below). Upon delivery of such written notice, the Company, in its sole discretion, may accelerate the effective date of such termination to such date as the Company deems appropriate, provided that Executive shall receive the compensation required under Section 4(a) of this Agreement for a full thirty (30) day period. The Company's failure to give notice under this Section 7(b) shall not, however, affect the validity of the Company's termination of the Term or Executive's employment, nor shall the lack of such notice entitle Executive to any rights or claims against the Company other than those arising from Executive's right to receive the compensation required under Section 4(a) of this Agreement for a full thirty (30) day period.

8. **Severance Benefits.**

(a) **"Cause" Defined**. "Cause" means (i) willful or gross malfeasance or misconduct by Executive in connection with Executive's employment; (ii) Executive' gross negligence in performing any of Executive's duties under this Agreement; (iii) Executive's conviction of, or entry of a plea of guilty or nolo contendere with respect to, any felony or misdemeanor reflecting upon Executive's honesty; (iv) Executive's breach of any written policy applicable to all employees adopted by the Company concerning conflicts of interest, political contributions, standards of business conduct or fair employment practices,

procedures with respect to compliance with securities laws or any similar matters, or adopted pursuant to the requirements of any government contract or regulation; or (v) breach by Executive of any of the material terms and conditions of this Agreement.

(b) **Termination without Cause**. If the Company ends the Term other than for Cause, Executive shall receive the benefits provided under Section 3 of this Agreement.

(c) **Termination for Any Other Reason**. If the Company ends the Term for Cause, or if Executive resigns as an employee of the Company, then the Company shall have no obligation to pay Executive any amount, whether for salary, benefits, bonuses, or other compensation or expense reimbursements of any kind, accruing after the end of the Term, and such rights shall, except as otherwise required by law (or, with respect to the Options, as set forth in the Plan or the applicable option grant agreements), be forfeited immediately upon the end of the Term.

9. **Additional Covenants.**

(a) **Confidentiality**. Executive confirms his continued acceptance of all his obligations under that certain Confidential Information and Proprietary Rights Agreement between Executive and the Company dated as of September 2, 1994.

(b) **"Non-Competition Period" Defined.** "Non-Competition Period" means the period beginning at the end of the Term and ending two years thereafter.

(c) **Covenants of Non-Competition and Non-Solicitation**. Executive acknowledges that his services pursuant to this Agreement are unique and extraordinary, that the Company relies upon Executive for the development and growth of its business and related functions. Executive also acknowledges that he will develop personal relationships with significant customers and suppliers of the Company and have control of confidential information concerning the Company's secret processes and methods for producing nanocrystalline powders, coatings for nanocrystalline materials, applications for such powders and coatings, and lists of customers, employees and contractors of the Company. For the foregoing reasons, and in consideration of the benefits available to Executive under Sections 3, 7(a) and 8(b) of this Agreement, Executive covenants and agrees that both during the Term of this Agreement and the subsequent Non-Competition Period, Executive shall not, in any manner, directly or indirectly, engage in, be financially interested in, represent, render any advice or services to, or be employed by or otherwise affiliated with, any other business (conducted for profit or not for profit) which is principally or materially engaged in or is competitive with the Company's business of developing, producing, coating, refining, forming, marketing, supplying or selling nanocrystalline and ultrafine powders. For the reasons acknowledged by Executive at the beginning of this Section 9(c), Executive additionally covenants and agrees that during the Non-Competition Period, Executive shall not, directly or indirectly, whether on Executive's own behalf or in behalf of any other person or entity, in any manner (A) contact, solicit or accept the business of any person or entity that was a customer, prospective customer, supplier or contractor of the Company for the purpose of obtaining business of the type performed by the Company, or (B) contact, accept or solicit, or attempt to solicit for employment or engagement any persons who were officers or employees of the Company upon the date of termination of his employment or at any time within a 180 day period before the date of termination or to aid any person or entity in any attempt to hire or engage any such officers or employees of the Company. The foregoing restrictions shall not preclude Executive from owning not more than three percent (3%) of the voting securities of any corporation whose voting securities are registered under Section 12(g) of the Securities Exchange Act of 1934, even if its business competes with that of the Company.

(d) **Remedies.**

(i) **Injunctions**. In view of Executive's access to the Company's confidential information, and in consideration of the value of such property to the Company, Executive agrees that the covenants in

this Section 9 are necessary to protect the Company's interests in its proprietary information and trade secrets, and to protect and maintain customer and supplier relationships, both actual and potential, which Executive would not have had access to or involvement in but for his employment with the Company. Executive confirms that enforcement of the covenants in this Section 9 will not prevent him from earning a livelihood. Executive further agrees that in the event of his actual or threatened breach of any covenant in this Section 9, the Company would be irreparably harmed and the full extent of injury resulting therefrom would be impossible to calculate, and the Company therefore will not have an adequate remedy at law. Accordingly, Executive agrees that temporary and permanent injunctive relief are appropriate remedies against such breach, without bond or security; provided, however, that nothing herein shall be construed as limiting any other legal or equitable remedies available to the Company.

(ii) **Enforcement**. Executive shall pay all costs and expenses (including, without limitation, court costs, investigation costs, expert witness and attorneys' fees) incurred by the Company in connection with its successfully enforcing its rights under this Agreement. The Company shall have the right to disclose the contents of this Agreement or to deliver a copy of it to any person or entity whom the Company believes the Executive has solicited in violation of this Agreement.

(iii) **Arbitration**. No dispute arising from Executive's actual or threatened breach of any covenant in this Section 9 shall be subject to arbitration. However, any other dispute or claim arising from any other provision of this Agreement, or relating to Executive's employment (whether based on statute, ordinance, regulation, contract, tort or otherwise), shall be submitted to arbitration before a single arbitrator pursuant to the Employment Arbitration Rules of the American Arbitration Association. Any such arbitration shall be conducted in Chicago, Illinois. An arbitration award rendered under this Section 9(d)(iii) shall be final and binding on the parties and may be submitted to any court of competent jurisdiction for entry of a judgment thereon in accord with the Federal Arbitration Act or the Illinois Arbitration Act.

10. **Limitation On Claims**. EXECUTIVE AGREES THAT HE WILL NOT COMMENCE ANY ACTION OR SUIT RELATING TO MATTERS ARISING OUT OF HIS EMPLOYMENT WITH THE COMPANY (IRRESPECTIVE OF WHETHER SUCH ACTION OR SUIT ARISES OUT OF THE PROVISIONS OF THIS AGREEMENT) LATER THAN SIX MONTHS AFTER THE FIRST TO OCCUR OF (A) THE DATE SUCH CLAIM INITIALLY ARISES, OR (B) THE DATE EXECUTIVE'S EMPLOYMENT TERMINATES FOR ANY REASON WHATSOEVER. EXECUTIVE EXPRESSLY WAIVES ANY APPLICABLE STATUTE OF LIMITATION TO THE CONTRARY.

11. **Successors and Assigns.**

(a) **Executive**. This Agreement is a personal contract, and the rights and interests that this Agreement accords to Executive may not be sold, transferred, assigned, pledged, encumbered, or hypothecated by Executive. Except to the extent contemplated in Section 3 above, Executive shall not have any power of anticipation, alienation or assignment of the payments contemplated by this Agreement, all rights and benefits of Executive shall be for the sole personal benefit of Executive, and no other person shall acquire any right, title or interest under this Agreement by reason of any sale, assignment, transfer, claim or judgment or bankruptcy proceedings against Executive. Except as so provided, this Agreement shall inure to the benefit of and be binding upon Executive and Executive's personal representatives, distributees and legatees.

(b) **The Company**. This Agreement shall be binding upon the Company and inure to the benefit of the Company and its successors and assigns, including but not limited to any person or entity that may acquire all or substantially all of the Company's assets or business or with which the Company may be consolidated or merged. This Agreement shall continue in full force and effect in the event the Company sells all or substantially all of its assets, merges or consolidates, otherwise combines or affiliates with another business, dissolves and liquidates, or otherwise sells or disposes of substantially all of its assets. The Company's obligations under this Agreement shall cease, however, if the successor to the Company, the purchaser or acquirer either of the Company or of all or substantially all of its assets, or the

entity with which the Company has affiliated, shall assume in writing the Company's obligations under this Agreement (and deliver an executed copy of such assumption to Executive), in which case such successor or purchaser, but not the Company, shall thereafter be the only party obligated to perform the obligations that remain to be performed on the part of the Company under this Agreement.

12. **Entire Agreement**. This Agreement and the other agreements referenced herein represent the entire agreement between the parties concerning Executive's employment with the Company and supersedes all prior negotiations, discussions, understandings and agreements, whether written or oral, between Executive and the Company relating to the subject matter of this Agreement.

13. **Amendment or Modification, Waiver**. No provision of this Agreement may be amended or waived unless such amendment or waiver is agreed to in writing signed by Executive and by a duly authorized officer of the Company other than Executive. No waiver by any party to this Agreement of any breach by another party of any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of a similar or dissimilar condition or provision at the same time, any prior time or any subsequent time.

14. **Notices**. Any notice provided for in this Agreement must be in writing and must be either personally delivered, mailed by first class mail (postage prepaid and return receipt requested), sent by reputable overnight courier service (charges prepaid), or by facsimile to the recipient at the address below indicated:

To the Company: Nanophase Technologies Corporation
1319 Marquette Drive
Romeoville, IL 60446
Attn: Chief Executive Officer
Facsimile: (630) 771-0825

To Executive: Dr. Richard Brotzman
318 Kent Court
Naperville, IL 60540-5711

or such other address or facsimile number, or to the attention of such other person as the recipient shall have specified by prior written notice to the sending party. Any notice under this Agreement shall be deemed to have been given when so personally delivered, or one day after deposit, if sent by courier, when confirmed received if sent by facsimile, or if mailed, five days after deposit in the U.S. first-class mail, postage prepaid.

15. **Severability**. If any provision of this Agreement shall be determined by any court of competent jurisdiction to be unenforceable to any extent, the remainder of this Agreement shall not be affected, but shall remain in full force and effect If any provision of this Agreement containing restrictions is held to cover an area or to be for a length of time that is unreasonable or in any other way is construed to be invalid, such provision shall not be determined to be entirely of no effect; instead, it is the intention and desire of both the Company and Executive that any court of competent jurisdiction shall interpret or reform this Agreement to provide for a restriction having the maximum enforceable area, time period and such other constraints or conditions as shall be enforceable under the applicable law.

16. **Survivorship**. The respective rights and obligations of the parties hereunder shall survive any termination of this Agreement to the extent necessary to the intended preservation of such rights and obligations.

17. **Headings**. All descriptive headings of sections and paragraphs in this Agreement are intended solely for convenience of reference, and no provision of this Agreement is to be construed by reference to the heading of any section or paragraph.

18. **Withholding Taxes**. All salary, benefits, reimbursements and any other payments to Executive under this Agreement shall be subject to all applicable payroll and withholding taxes and deductions required by any law, rule or regulation of any federal, state or local authority.

19. **Applicable Law: Jurisdiction**. The laws of the State of Illinois shall govern the interpretation of the terms of this Agreement, without reference to rules relating to conflicts of law.

IN WITNESS WHEREOF, the parties hereto have executed this Employment Agreement as of the date first written above.

NANOPHASE TECHNOLOGIES CORPORATION

By: /s/ JOSEPH CROSS

Its: Chief Executive Officer

/s/ DR. RICHARD W. BROTZMAN, JR.

Dr. Richard W. Brotzman, Jr.

Exhibit 10.28

AMENDMENT NO. 1 TO COOPERATION AGREEMENT

REFERENCE IS MADE to the Cooperation Agreement, dated as of June 24, 2002 ("Agreement"), by and between **NANOPHASE TECHNOLOGIES CORPORATION**, a Delaware corporation ("Nanophase") and **ROHM AND HAAS ELECTRONIC MATERIALS CMP INC.** (formerly known as Rodel, Inc.), a Delaware corporation ("RHEM"), which is hereby amended and additional agreements made, as follows. All capitalized terms used in this Amendment shall have the same meanings as set forth in the Agreement.

1. **Development Funding.** In consideration of Nanophase's agreements herein and to fund continued development of Particles for applications in the Field, RHEM agrees to pay Nanophase cash in the sum of $600,000, payable in four equal installments of $150,000 on March 31, 2004, June 30, 2004, September 30, 2004 and December 31, 2004, respectively.

2. **Exclusivity.** Notwithstanding anything to the contrary contained in the Agreement, the Agreement will remain mutually exclusive through calendar year 2004. During 2004 and thereafter, so long as RHEM purchases the minimum amounts agreed to herein, Nanophase will not sell or sample Ceria Particles for applications in the Field to any manufacturer, seller or end user of CMP slurries other that RHEM, and RHEM will not purchase Ceria Particles for CMP applications from any manufacturer or supplier other than Nanophase, other than evaluation samples in connection with Section 11(b)). Exclusivity in 2005 shall be conditioned on RHEM's purchase from Nanophase during calendar year 2005 of at least [* * *] in Particles for applications in the Field or such other amount of sales of Particles as the parties shall determine by mutual written agreement no later than October 15, 2004. Exclusivity in 2006 and thereafter shall be conditioned on RHEM's purchase from Nanophase during each such respective calendar year of those dollar amounts of purchases of Particles for

---

* * * CONFIDENTIAL TREATMENT REQUESTED – this confidential portion has been omitted from this document and filed separately with the Commission

applications in the Field as the parties shall determine by mutual written agreement, respectively, by October 15 preceding each such year. If RHEM fails to purchase the required amounts at any time after calendar year 2004, or if RHEH informs Nanophase in writing (by forecast or otherwise) that it does not expect to purchase the required amounts, then Nanophase may initiate Adjustment Discussions in accordance with Section 12 of the Agreement.

3. **Term.** The initial term of the Agreement is hereby extended through December 31, 2009.

4. **Savings.** Except as expressly stated above, all other terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Amendment No. 1 as of the 25th day of February, 2004

NANOPHASE TECHNOLOGIES CORPORATION

By: /s/ JOSEPH CROSS

Joseph Cross
President & CEO

ROHMAND HAAS ELECTRONIC MATERIALS CMP INC.

By: /s/ NICHOLAS A. GUTWEIN

Nicholas A. Gutwein
President & CEO

Exhibit 10.29

JOINT DEVELOPMENT AGREEMENT

THIS AGREEMENT, effective this 23 day of March, 2004 ("Effective Date"), between

Nanophase Technologies Corporation
1319 Marquette Drive
Romeoville, Illinois 60446
(hereinafter "NTC")

and

Altana Chemie AG
Abelstrasse 45
46483 Wesel
Germany
(hereinafter "Altana")

WHEREAS, Altana develops, produces and sells additives for paints and plastics in the coatings and plastics industry, products for coatings and sealants for the packaging and coil industry, and compounds and varnishes in the electrical insulation business, and Altana has an interest in developing improvements and new products related thereto; and

WHEREAS, NTC has manufacturing and technical capabilities for the production of nanocrystalline metal oxide particles, coated and dispersed nanocrystalline metal oxides and surface treated nanocrystalline metal oxide particles; and

WHEREAS, concurrently with this Agreement, Altana has entered into a Stock Purchase Agreement with NTC under which Altana has purchased for $10 million an equity ownership position in NTC in support of Altana's strategic objective of obtaining exclusive access to emerging nanotechnologies and commercial supply of Nanomaterials important to Altana's growth; and

WHEREAS, NTC and Altana wish both to engage in a program to develop improvements and new products involving application of nanomaterials in the Field of Application (as defined in Article 1.3 below), and to enter into exclusive supply arrangements for Altana's purchase of such nanomaterials from NTC, as described below.

NOW THEREFORE, in consideration of the mutual covenants herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Altana and NTC agree as follows:

Article 1. Definitions

As used in this Agreement, the following terms shall have the meanings set forth below:

1.1 "Technology" shall mean any discovery, invention, know-how, trade secret, formulation or other works, technical information or data, together with any and all patent rights associated therewith.

1.2 “Technology Development” shall mean any development or modification in or to the Technology, whether patentable or not, conceived or developed in connection with a Specific Development Project (as defined in Article 2.2 below).

1.3 “Field of Application” shall mean, individually and collectively, Nanomaterials for use or usable directly or indirectly in:

(a) paints, coatings and inks (for example, general industrial coatings, architectural coatings, coil coatings, printing inks, automotive OEM and refinish coatings, wood coatings, consumer goods packaging coatings and coatings for electrical insulation applications; such paints, coatings and inks being based on any technology, including without limitation solvent-based coatings, water-based coatings, powder coatings, UV/EB curable coatings, one-component coatings and two-component coatings);

(b) polymers and plastics (for example, thermoset applications, PVC, and other thermoplastics);

(c) overprint varnishes, closure compounds and can end sealants for packaging applications; and

(d) varnishes, compounds and sealants for electrical insulation applications.

The Field of Application does *not* include:

(w) applications involving thermal spray, cosmetics, personal care, antimicrobials in pressure-treated wood, applications for dielectrics and other electronic applications other than industrial permanent coatings;

(x) NTC’s future sale to any customer (and its affiliates) of one hundred (100) kilograms or less during any twelve (12) month period of Nanomaterials for use in the Field of Application with specifications the same as or similar to those products depicted in the product catalogues posted on NTC’s website at www.nanophase.com;

(y) for a transition period of one hundred twenty (120) days after the Effective Date of this Agreement (the “Transition Period”), NTC’s sales to, or on-going work with, any customer to whom NTC has supplied Nanomaterials for potential uses within the Field of Application before the Effective Date of this Agreement (together with its affiliates, a “Pre-Existing Customer”), provided that NTC and Altana will jointly formulate a transition plan for each Pre-Existing Customer identifying the party primarily responsible for managing and communications with each such Pre-Existing Customer within the Field of Application; or

(z) after the Transition Period, NTC may continue to sell Nanomaterials for use in the Field of Application (i) having an aggregate sales price of not more than Thirty Thousand Dollars ($30,000) to any Pre-Existing Customer during any twelve (12) month period and not more than Two Hundred Fifty Thousand Dollars. ($250,000) in the aggregate to all such Pre-Existing Customers during any such period, provided that NTC has used during the Transition Period and uses after the Transition Period reasonable efforts to transition such Pre-Existing Customers to Altana; and (ii) to one (1) Pre-Existing Customer (a paint company whose identity NTC will make reasonable efforts to obtain the customer’s consent to disclose to Altana), with such sales limited to Nanomaterials consisting of water-based dispersions of zinc oxide for use only in paint to be sold to the discount retail home do-it-yourself market in the U.S., provided that, despite NTC’s reasonable efforts, such Pre-Existing Customer declines any transition to Altana.

The customers to which NTC may sell Nanomaterials under Article 1.3(z) shall not, in any event, (i) be known by NTC to be competitors of Altana or (ii) based outside the United States. As to sales made pursuant to Article 1.3(x)-(z), NTC shall, except to the extent prohibited by a confidentiality agreement in effect on the Effective Date, disclose quarterly to Altana in writing

such sales by amount, purchaser, Nanomaterial and the application to which NTC anticipates the customer will put the Nanomaterials within the Field of Application.

The parties further agree that, if any potential commercial use of Nanomaterials within the Field of Application arises in which NTC has an opportunity to participate, including business that NTC offers to transition to Altana pursuant to Article 1.3(y) or 1.3(z), but in which Altana expresses no interest within sixty (60) days after NTC notifies Altana of the potential use, that potential use shall be deemed to be outside the Field of Application.

1.4 "Nanomaterial-based Products" shall mean products in the Field of Application (unless otherwise specifically provided herein), including those described in Article 1.3(a)-(d), which consist solely of or contain Nanomaterials. The products may be additives, coatings, paints, varnishes, compounds, sealants or the like containing the Nanomaterials or, if the Nanomaterials can be sold by Altana without mixing into additives, coatings, etc., the Nanomaterials themselves as prepared by NTC.

1.5 "Nanomaterials" shall mean all materials produced or capable of being produced by NTC during the Term of this Agreement.

1.6 "NTC's Patents" shall mean any and all technology and know-how disclosed, taught, suggested or claimed in:

(a) United States Patent Nos. 6,669,823; 6,416,818; 6,033,781; 5,993,967; 5,460,701; 5,514,349; 5,874,684; 5,128,081; 5,320,800; and any patents and/or applications which are continuations, continuations in part, divisionals, re-examinations or reissues of these U.S. Patents, including any related patents issued by governments other than the United States;

(b) pending United States Patent Applications Nos. 09/726,686; 10/174,955; 10/287,144; 10/047,552; 10/357,941; 10/368,941; 10/452,736; 10/658,178; and any subsequently issued patent and/or applications which are continuations, continuations in part, divisionals, re-examinations or reissues of those U.S. Patent Applications, including any related patents issued by governments other than the United States; and

(c) any other patent applications for uses within the Field of Application that NTC files before or after the Effective Date of the Agreement.

The foregoing patents and any enhancements or improvements thereof are intellectual property as defined by U.S. Code Title 11, Section 101 et seq. and shall be treated as such.

1.7 "Target Price" shall mean the price per kilogram of Nanomaterial at which the parties contemplate (before commencing the given Specific Development Project) NTC selling to Altana and Altana purchasing from NTC reasonable commercial volumes of the particular Nanomaterial that the parties seek to obtain through a given Specific Development Project (as defined in Article 2.2 below) and as set forth in the Specific Development Project Agreement. The principles by which the Target Price shall be set are set forth in Exhibit A hereto.

Article 2. Scope of Development Program

2.1 Initiation of Development Program. During the Term of this Agreement, Altana will inform NTC of specific technical features of certain Nanomaterials which Altana wishes NTC to develop or modify through a cooperative development project with NTC. Altana and NTC will discuss the technical approaches which might be utilized in order to achieve the desired technical

features. The parties may agree to embark on one or more specific development projects wherein each party shall use its reasonable efforts to achieve the desired technical features (each, a "Specific Development Project" and collectively, the "Development Program"). Before conducting any work under the Development Program, the parties will agree upon an initial Specific Development Project (as defined in Article 2.2 below). Altana and NTC subsequently may undertake one or more additional Specific Development Projects during the Term of this Agreement.

2.2 Specific Development Project. Each Specific Development Project agreed upon by the parties shall be memorialized in a written agreement, signed by the parties before starting work on the Specific Development Project. The agreement will include a description of:

(a) the goals and objectives of the Specific Development Project;

(b) the milestones by which progress in achieving the goals and objectives will be measured;

(c) the anticipated timing of both each milestone and the parties' periodic mutual assessment of the Project;

(d) the Target Price;

(e) the resources each party will provide to the Project (e.g., personnel, equipment, materials, etc.); and

(f) the reasonably negotiated allocation between Altana and NTC of the cost of the respective resources each party provides to the Project and funding for the Project; whereby the parties expect that each party shall bear its own costs and only in the following circumstances will Altana be requested to bear more than the cost of its own employees, their travel expenses and its other internal costs, such as laboratory costs: (i) where the duration of the Project is expected to be greater than twelve (12) months; (ii) where NTC has to purchase additional equipment to carry out the Project; or (iii) where NTC has to hire additional personnel to carry out the Project.

The parties contemplate that, in connection with each Specific Development Project, NTC will provide Altana with certain samples and other information, and Altana will evaluate those samples and information. Altana shall report to NTC on the results of Altana's evaluations. Upon achieving the technical features sought through the Project, NTC will notify Altana whether NTC expects to be able to produce the Nanomaterials resulting from the Specific Development Project for a sales price at or within ten percent (10%) of the Target Price.

2.3 Project Cooperation and Coordination. Altana and NTC agree to use their commercially reasonable efforts to cooperate with one another and work together, with the involvement of their respective senior management, to formulate Specific Development Projects that will lead to co-development of products in the Field of Application. The parties' cooperation will include:

(a) communicating clearly and openly about contemplated applications and expected commercial acceptance and results;

(b) forming joint teams to formulate specific goals and milestones for customer-focused product solutions;

(c) exchanging quarterly written reports setting forth each party's progress to date, including in relation to the initial milestones, estimated time necessary to conclude the Specific Development Project, an estimate of the likelihood of success and any modification of the sales price in relation to the Target Price;

(d) holding quarterly meetings, shortly after each party's receipt of the other party's report described in Article 2.3(c); and

(e) integrating each party's resources and capabilities (e.g. personnel) to achieve customer acceptance of the resulting products in the Field of Application.

2.4 Exclusivity.

2.4 (a) NTC agrees to work exclusively with Altana in the development of products in the Field of Application and not to (i) sell any Nanomaterials or Nanomaterial-based Products or (ii) license any Technology, which in either such case (i or ii) is used or NTC believes may be used in the Field of Application, except with respect to Altana.

2.4 (b) NTC agrees to offer to Altana any product which NTC believes may be used in the Field of Application, whether or not developed pursuant to this Agreement, but solely for use in the Field of Application. If Altana expresses no interest in such product within sixty (60) days after NTC offers the product to Altana, such product shall be deemed to be outside the Field of Application. If Altana expresses an interest in such product, the product shall be deemed subject to Article 2.4(c).

2.4 (c) Altana agrees to purchase exclusively from NTC (as provided in the relevant Supply Agreement) Nanomaterials developed by NTC pursuant to a Specific Development Project.

2.4 (d) Altana agrees not to work with other companies to develop or purchase products to substitute Nanomaterials developed under a Specific Development Project and sold to Altana by NTC (as provided in the relevant Supply Agreement).

Article 3. Future Supply

If any Specific Development Project undertaken in connection with the Development Program results in the development of one or more commercially viable Nanomaterials, the parties will enter into a supply agreement (the "Supply Agreement") having an initial term of at least three (3) years and a price at or within ten percent (10%) of the Target Price and customary terms, including those set forth in Exhibit B hereto.

Article 4. Ownership of Technology and Technology Developments

4.1 Previously Developed Technology. All Technology owned or controlled by either party to this Agreement before the Effective Date, or developed or acquired by that party independent of activities undertaken in connection with the Development Program, shall remain in the ownership and/or control of that party or its assignee, licensee or other designee.

4.2 Protection of Subsequent Technology Developments

4.2 (a) The parties shall meet regularly, at least once every three (3) months. At or prior to the meeting, (i) NTC shall disclose to Altana all Technology Developments which are a result of a Specific Development Project undertaken in connection with the Development Program, and (ii) Altana shall disclose to NTC the results of its analysis and application of NTC's Technology Developments as Altana believes will be helpful in pursuing the Specific Development Project. Such meetings may be held concurrently with the parties' periodic mutual assessment of a Specific Development Project.

4.2(b) Altana shall have exclusive worldwide ownership rights in Technology Developments, including any trade secrets, patents and patent applications relating thereto and directed to Nanomaterial-based Products (hereinafter "Altana's Interests"). Altana, at its sole discretion and expense, will have the right (except as limited below) to prepare, file and prosecute patent applications directed to Nanomaterial-based Products, which are a result of a Specific Development Project. However, Altana shall not have any ownership rights in or be entitled to prepare, file or prosecute any such patent applications which include or are based upon:

(i) the methods or processes by which the Nanomaterials are manufactured;

(ii) the composition of the Nanomaterials; or

(iii) any products in areas other than the Field of Application.

Nothing herein shall give Altana any ownership rights with respect to any technology or know-how disclosed in NTC's Patents.

4.2 (c) NTC shall have exclusive worldwide ownership rights in Technology Developments, including any patents and patent applications relating thereto or directed to any methods, processes or the composition of the Nanomaterials and any products in areas other than the Field of Application (hereinafter "NTC's Interests"), subject to the rights licensed to Altana pursuant to Article 5 below. NTC, at its sole discretion and expense, will have the right to prepare, file and prosecute patent applications directed to any Technology Development it develops and is not allocated to Altana pursuant to Article 4.2(b) above.

4.2 (d) If either party abandons any patent application that it files pursuant to this Agreement (the "Abandoning Party"), the other party (the "Non-Abandoning Party") may, by written notice to the Abandoning Party, elect to continue prosecuting the patent application at the Non-Abandoning Party's sole expense. If the Non-Abandoning Party so elects, the Abandoning Party agrees to and does hereby irrevocably assign to the Non-Abandoning Party all of the Abandoning Party's right, interest and title in and to its abandoned patent application and any patents subsequently issued in connection with its abandoned patent application, at no cost to the Non-Abandoning Party.

4.2 (e) Each party shall promptly notify the other party, in writing, of its intent to pursue or abandon patent protection as set forth under Articles 4.2(b) or 4.2(c) above. The parties agree to cooperate with respect to the preparation of any patent applications. A party's notification of its intent to pursue such patent protection shall itself constitute Proprietary Information. Either party may, in its sole discretion, determine not to pursue patent protection and instead to keep the subject Technology Development a trade secret. Such decision shall not constitute an abandonment.

4.2 (f) The parties agree to execute any assignments required to provide the exclusive ownership rights referred to in Articles 4.2(b) and 4.2(c) above.

4.2 (g) Each party shall bear the costs associated with the maintenance and enforcement of patent applications and patents relating to its Interests.

4.2 (h) The pursuit of patent protection on any Technology Development shall be subject to the provisions concerning Proprietary Information in Article 6 below.

Article 5. Reservation of Rights and Licenses

5.1 Altana License. Altana agrees to grant and does hereby grant to NTC a royalty-free, world-wide, non-exclusive right and license under Altana's Interests, to (a) make, use and sell Nanomaterial-based Products for use in areas other than the Field of Application, and (b) make Nanomaterial-based Products for sale to Altana.

5.2 Further Rights. NTC agrees to grant and does hereby grant to Altana the following rights, exercisable by Altana only upon the happening of the events stated below:

(a) an exclusive, royalty-bearing, world-wide license from NTC to make, use, develop and sell Nanomaterials in the Field of Application under NTC's patents, with such license bearing a royalty payable by Altana to NTC for a period of ten (10) years after the date of exercise, and such royalty, in the amount of ten percent (10%) of the per kilogram price of the Nanomaterials made, used or sold by Altana in the Field of Application, paid to NTC on a quarterly basis, accompanied by a written report of the quantity of Nanomaterials made, used or sold by Altana each month. The royalty shall be based on (i) the net sales price, if the Nanomaterials are sold as a separate product in the market, (ii) if (i) does not apply, then the lower of the Target Price or the actual price as set forth in the Supply Agreement, or (iii) if neither (i) nor (ii) applies, then Altana's manufacturing cost including the cost of material;

(b) an option to purchase such available equipment in NTC's possession as Altana may reasonably require to exercise its rights under the license, with the purchase price of the equipment being its fair market value based on replacement cost; and

(c) an option to have NTC make available to Altana the reasonable services of appropriate NTC personnel to provide technical assistance to Altana under the licensed patents, with Altana paying for such services at the rate of One Thousand Five Hundred Dollars ($1,500) per day for each NTC employee or contractor providing such technical assistance to Altana, together with each such person's reasonable travel, lodging, meals and other expenses.

Altana may exercise its rights set forth in Article 5.2(a) only if, apart from a Force Majeure Occurrence as set forth in Article 11.14, NTC has failed to fulfill, and continues to fail to fulfill, one or more of its obligations under a Supply Agreement or under this Agreement in a material respect for more than sixty (60) days after notice from Altana specifying said failure. For purposes hereof, such the failure to supply Altana at least seventy-five percent (75%) of Altana's orders properly submitted pursuant to a Supply Agreement shall be such a failure. Altana may exercise its rights set forth in Article 5.2(b) and (c) only if NTC has failed to fulfill, and continues to fail to fulfill, one or more of its obligations under a Supply Agreement or under this Agreement in a material respect for more than ninety (90) days after notice from Altana specifying said failure. For purposes hereof, such failure to supply Altana at least twenty-five percent (25%) of Altana's orders properly submitted pursuant to a Supply Agreement shall be such a failure. For purposes of this Article, an order shall be deemed not to have been properly submitted if it does not comply with forecast procedures or exceeds quantity limits set forth in the respective Supply Agreement.

Article 6. Proprietary Information

6.1 Basic Obligation. In the course of dealing with each other under this Agreement, including carrying out the Development Program, Altana and NTC may be given access to or come in contact with each other's proprietary or confidential information which, if used by the Receiving Party (as defined in Article 6.2 below) or disclosed to a third party would be highly detrimental

and damaging to the Disclosing Party (as defined in Article 6.2 below). Accordingly, the parties hereby assure each other that they will keep any such information in confidence and hereby agree to comply with the provisions below.

6.2 Definitions. For the purpose of this Agreement, the indicated terms shall have the following meanings: “Disclosing Party” means a party to this Agreement who supplies Proprietary Information (as hereinafter defined) to the other party to this Agreement; “Receiving Party” means a party to this Agreement who receives Proprietary Information (as hereinafter defined) from a Disclosing Party; and “Proprietary Information” means information in any form, tangible or intangible, which may be disclosed by a Disclosing Party to a Receiving Party, which is nonpublic, proprietary, a trade secret or confidential in nature. If a Disclosing Party furnishes samples, software or equipment to the Receiving Party, the items so received and any information learned therefrom shall be treated as Proprietary Information under this Agreement. Proprietary Information disclosed by a Disclosing Party to a Receiving Party shall be identified in writing or other tangible form at the time of disclosure, or within thirty (30) days of non-written disclosure, as the Proprietary Information of the Disclosing Party.

6.3 Permitted Uses. Proprietary Information disclosed by the Disclosing Party to the Receiving Party shall be used by the Receiving Party only in connection with the Development Program or to facilitate a mutually acceptable and beneficial business relationship with the Disclosing Party (“Purpose”).

6.4 Results of Evaluation. Within thirty (30) days of completing any evaluation, NTC will make available to Altana the results of such evaluation. The results of the evaluation may not be used in the Field of Application or disclosed without the consent of Altana, provided that NTC may disclose publicly the existence of any new Nanomaterials it develops.

6.5 Information Held in Confidence. The Receiving Party, on behalf of itself and its employees and agents, agrees to retain the Proprietary Information received from the Disclosing Party in strict confidence and exercise reasonable steps to safeguard the confidentiality of such Proprietary Information. Further, the Receiving Party shall neither disclose nor use the Disclosing Party’s Proprietary Information in a manner other than the Purpose for a period starting from the Effective Date and ending three years after termination of this Agreement.

6.6 Exceptions. This Agreement shall not affect the Receiving Party’s rights to use or disclose information which is:

(a) in the public domain at the time it is disclosed under this Agreement;

(b) subsequently published or publicly disclosed by persons other than NTC or Altana (and not directly or indirectly provided to such persons by NTC or Altana);

(c) acquired by the Receiving Party from a third person having no obligation of confidentiality to the Disclosing Party;

(d) known to the Receiving Party at the time of disclosure;

(e) developed independently by or on behalf of the Receiving Party, without relying upon or using any Proprietary Information of the Disclosing Party;

(f) compelled by law to be disclosed by the Receiving Party, provided that the Receiving Party shall use its best efforts to give the Disclosing Party at least ten (10) days prior written notice of such legally compelled disclosure;

(g) necessary for the Receiving Party to file patent applications directed to its Interests as provided in Articles 4.2(b) and 4.2(c) above, and consistent with the notification requirements of Articles 4.2(d) and 4.2(e) above; or

(h) approved for disclosure by the Receiving Party through the Disclosing Party's written authorization prior to the Receiving Party's disclosure.

The Receiving Party shall have the burden of establishing its prior knowledge or independent development in accordance with Article 6.6(d) and (e), in each case by competent written proof,

6.7 Publicly Available Information. For purposes of Article 6.6, Proprietary Information supplied by a Disclosing Party to a Receiving Party pursuant to this Agreement shall not be deemed to be publicly available or in the possession of a Receiving Party merely because it encompasses general disclosures or combinations that are publicly available, or in the prior possession of the Receiving Party.

6.8 Disclosure to Affiliates. Altana may disclose NTC's Proprietary Information to its parent company, subsidiary or affiliated companies, provided that each such entity first provides to NTC its written agreement to be bound by the terms of Articles 4, 6 and 8 of this Agreement. Said companies shall have the right to use NTC's Proprietary Information on the same terms, conditions and limitations as are set forth in this Agreement.

Article 7. Representations and Warranties

Each party represents and warrants to the other as follows:

7.1 It owns or has rights to use its Proprietary Information and Technology and has the right to disclose it. To its knowledge, its Technology does not infringe upon the rights of any third party and no claims or proceedings have been brought or threatened alleging the invalidity in whole or in part of its Technology which is the subject of a patent.

7.2 It has taken all necessary actions on its part to authorize the execution, delivery and performance of its obligations undertaken in, this Agreement. This Agreement has been duly executed and delivered by and on its behalf and constitutes legal, valid and binding obligations enforceable against it in accordance with its terms.

7.3 It is duly organized, validly existing and in good standing under the law of the place of its organization.

7.4 The execution, delivery and performance of this Agreement: (i) do not conflict with or violate any applicable statute, law, rule or regulation; (ii) do not conflict with or violate any organizational, charter or internal governance document; (iii) do not conflict with or constitute a default under any contract, agreement or obligation applicable to it.

Article 8. Third Party Royalties

If a royalty or other compensation is required to be paid to permit Altana to market and sell any Nanomaterial-based Products anywhere in the world pursuant to this Agreement or a Supply Agreement by reason of Altana's use of NTC's Technology or NTC's grant of rights to such Technology to a third party, NTC shall make said payment, without setoff against or reimbursement by Altana. Likewise NTC shall bear any transaction costs incurred in arranging for such rights. Such payments shall not be taken into account in setting the Target Price. NTC shall have no such obligation with respect to royalties or other compensation payable by reason of Altana's Technology.

Article 9. Term and Termination

9.1 Initial and Renewal Term. This Agreement shall have an initial term (the "Initial Term") of eight (8) years after the Effective Date. Thereafter, this Agreement shall automatically renew for successive one (1) year periods (each a "Renewal Period") until either party terminates the Agreement by giving the other party three (3) months' written notice before the expiration of the Term. The "Term," as used in this Agreement, shall include the Initial Term and any Renewal Period.

9.2 Default. Upon default by either party of any material provision of either this Agreement or (unless otherwise specifically agreed) the parties' agreement concerning any Specific Development Project, the non-defaulting party shall advise the defaulting party that it must cure said default within thirty (30) days. Failing such cure, the non-defaulting party may, without waiving any right of breach of contract, terminate this Agreement immediately upon its written notice.

Article 10. Dispute Resolution

10.1 Pre-Arbitration Efforts. The parties shall settle any dispute, controversy or claim arising out of or relating to this Agreement (a "Dispute") using the procedure set forth in this Article.

10.1(a) Either party may declare there to be a Dispute by so notifying the other party and submit the Dispute to the party's Steering Committee (consisting of three (3) officers or managers designated from time to time by the party) for resolution.

10.1(b) The members of the Steering Committee shall use their reasonable efforts to solve the Dispute. If the Steering Committee is nevertheless unable to resolve the Dispute within ten (10) business days after notifying the other party of a Dispute having been declared, either party may submit the Dispute to the CEOs of the parties.

10.1(c) If the CEOs are unable to resolve the Dispute within an additional ten (10) business days, either party may submit the Dispute to arbitration.

10.2 Arbitration. Any Dispute not settled pursuant to Article 10.1 shall be decided by arbitration in accordance with the rules of the American Arbitration Associate ("AAA") for International Arbitration in effect at the time the Dispute is submitted. To the extent such rules are inconsistent with this provision, this provision shall control.

10.2(a) If the Dispute relates primarily to claims based on issues arising under Article 4 or 6, it shall be decided by one arbitrator who shall be an attorney licensed in the United States

with not less than twelve (12) years of experience in litigation and intellectual property law in the chemical industry and shall be agreed to by the parties.

10.2(b) If the Dispute, if decided fully in favor of one party would reasonably be expected to result in an award of Five Hundred Thousand Dollars ($500,000) or less, it shall be decided by one arbitrator who shall be agreed to by the parties.

10.2(c) All Disputes submitted to arbitration not covered by Articles 10.2(a) or (b) shall be decided by a panel of three (3) neutral arbitrators, selected by the parties.

10.2(d) If the parties are not able to select an arbitrator or arbitrators within ten (10) business days after submission of the Dispute to arbitration, then either party may submit the selection to the AAA, which shall select the arbitrator pursuant to the procedures under the applicable AAA rules.

10.3 Place and Applicable Law. The arbitration shall be held in Atlanta, Georgia. The arbitrators shall apply the substantive law of the State of Illinois, except that the interpretation and enforcement of these arbitration provisions shall be governed by the Federal Arbitration Act.

10.4 Supplemental Means. Neither Party shall have the right independently to seek recourse from a court of law or other authorities in lieu of arbitration, but each Party has the right before or during the arbitration to seek and obtain from the appropriate court provisional remedies to avoid irreparable harm, maintain the status quo or preserve the subject matter of the arbitration. There shall be a stenographic record of the arbitration proceedings. The decision of the arbitrators (if there be more than one) shall be by majority vote and shall be final and binding upon both Parties. The arbitrator(s) shall render a written opinion setting forth the findings of fact and conclusions of law.

10.5 Expenses. The expenses of the arbitration shall be borne by the Parties in proportion as to which each Party prevails or is defeated in arbitration including the reasonable costs and expenses of the counsel and other experts representing the two Parties in the proceeding.

Article 11. Miscellaneous

11.1 Assignment. Neither this Agreement, nor the rights and obligations created hereunder, may be assigned without prior written consent of the non-assigning party, which consent shall not be unreasonably withheld. The foregoing to the contrary, notwithstanding, Altana may assign its rights and obligations hereunder, in whole or in part, to its parent company and subsidiary and affiliated companies, provided, however that Altana shall be responsible for their compliance with the terms hereof.

11.2 Non-Solicitation. Each party agrees that, during the Term of this Agreement and for two years after the termination or expiration of the Agreement, the party will not directly or indirectly solicit, induce or try to induce any employee or contractor of the other party to leave that party’s employment or engagement.

11.3 Applicable Law. This Agreement shall be governed by and interpreted under the laws of the State of Illinois, without giving effect to the choice of laws principles.

11.4 Entire Agreement. This Agreement constitutes the entire understanding between the parties and supersede all previous understandings, agreements, communications and representations, whether

written or oral, concerning the treatment of Proprietary Information and Technology Development to which this Agreement relates.

11.5 Modifications. No modifications of this Agreement or waiver of any of its terms will be effective unless made in writing signed by the party against whom it is sought to be enforced. Failure by either party to require the other party's performance of any terms of this Agreement, or waiver by either party of any breach of this Agreement by the other party shall not prevent subsequent enforcement of such term or be deemed a waiver of any subsequent breach thereof.

11.6 No Agency. No agency or partnership relationship shall be created between the parties by this Agreement. Neither party has the right to supervise or direct the employees of the other.

11.7 Export Laws. Each party agrees to comply with all export laws and regulations of the United States applicable to any information disclosed hereunder.

11.8 Counterparts. For the convenience of Altana and NTC, this Agreement may be executed in one or more counterparts, each of which shall be deemed an original for all purposes, but all of which shall constitute one and the same instrument.

11.9 Interpretation. When used herein, the term "including" shall mean "including, without limitation." Headings are solely for the convenience of the parties and do not limit or otherwise bear on the interpretation of this Agreement.

11.10 Notice. Notice shall be effective upon mailing (or placement with a recognized overnight delivery service), if correctly addressed with sufficient postage to the addressee at the address set forth above.

11.11 Partial Invalidity. Each provision of this Agreement shall be valid and enforced to the fullest extent permitted by law. The unenforceability of any provision of this Agreement shall not affect the enforceability of any other provision. In the event of such unenforceability, the parties shall agree upon a substitute provision having legal and commercial effects as similar as legally permitted to the unenforceable provision.

11.12 Press Releases. Each party hereto shall consult with the other not less than three (3) business days before issuing any press release pertaining to this Agreement and shall not make reference to the other party in any such press release unless either required to do so by law or with the written consent of the other party.

11.13 Survival. In the event of termination or expiration of this Agreement, such termination or expiration shall not affect any party's accrued or ongoing rights or obligations under Articles 4.1, 4.2(b), 4.2(c), 5.1, 5.2, 6, 8, 10 and 11 of this Agreement.

11.14 Force Majeure. Neither party shall be liable to the other for any failure or delay in performing its obligations under this Agreement that results from war, terrorism, riots or other civil disorder, fire, flood, acts of God, embargoes or other causes beyond the control of the parties which render it commercially infeasible for either party to comply with the terms of this Agreement (a "Force Majeure Occurrence").

The Parties have caused this Agreement to be executed by their duly authorized representatives on the date set forth above.

ALTANA Chemie AG

By: /s/ DR. MATTHIAS L. WOLFGRUBER

Dr. Matthias L. Wofgruber

President and CEO

By: /s/ MARTIN BABILAS

Martin Babilas
Vice President Strategic Business Development

NANOPHASE TECHNOLOGIES CORP.

By: /s/ JOSEPH CROSS

Name: Joseph Cross

Title: President & CEO

EXHIBIT A

TARGET PRICE PRINCIPLES

1. Altana shall identify a desired Nanomaterial-based Product in the Field of Application and estimate (a) the volume potential following product introduction and ramp up, (b) the added value that the successful product is anticipated to provide, and (c) the anticipated time required to achieve the volume potential.
2. NTC and Altana shall together discuss (a) the Nanomaterials that may best provide the desired technical features of the identified product, and (b) whether a surface treatment of the particles in the Nanomaterials is required.
3. NTC shall provide Altana with the Target Price for the desired product at various volumes based on the estimates provided by Altana.

NTC shall set the Target Price of a particular Nanomaterial based on NTC's determination of the following pricing elements per kilogram or liter of Nanomaterial, all to the extent they are attributable to the Nanomaterials supplied to Altana:

A. The anticipated cost of raw materials, including an allowance for wastage.

B. The anticipated cost of production, including labor, energy, water and other utilities, waste disposal and depreciation.

C. A contribution to the overall overhead cost of NTC's resources, including research, development and general administration.

D. A markup on the pricing elements described in paragraphs A, B and C allowing NTC to realize an appropriate profit on the sale of the Nanomaterial.

E. An additional markup to reflect the contribution of the Nanomaterial to the final sales price, which markup shall be up to five percent (5%) of the net sales price expected to be achieved by Altana.

NTC's Target Price shall not include the cost of packaging and shipping Nanomaterial. References herein to costs, profit or markups shall not imply any right in a party to inspect the other's books or any obligation of either party to disclose to the other the amount of any pricing element upon which the Target Price is based.

EXHIBIT B

SUPPLY AGREEMENT TERM SHEET

The Supply Agreement for a particular Nanomaterial shall consist of the following principal terms:

1. Term (initially 3 years, consecutive 1-year renewal periods with 3-months notice)
2. Product specifications and warranties and product liability
3. Estimated quantities, with maximum quantities and rolling forecast procedures
4. Sales price and payment terms
5. Order procedures and delivery (including shipping and packaging) terms
6. With respect to the particular Nanomaterial, Altana is bound to the exclusivity obligations of Articles 2.4 (c) and (d) as long as NTC delivers the agreed quantities of the Nanomaterial at the agreed sales price and fulfills its obligations under the Supply Agreement. If NTC is unwilling or unable to do so, Altana may (a) produce or have the Nanomaterial produced under a royalty bearing license from NTC or (b) produce or have produced one or more substitute nanomaterials.

Exhibit 23.1

CONSENT OF INDEPENDENT AUDITORS

We consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-53445 and No. 333-74170) and the Registration Statement on Form S-3 (No. 333-90326) of our report dated January 23, 2004, except for Note 20, as to which the date is March 23, 2004, with respect to the financial statements of Nanophase Technologies Corporation included in this Annual Report on Form 10-K for the year ended December 31, 2003.

/s/ McGladrey & Pullen LLP

McGladrey & Pullen LLP

Schaumburg, Illinois
March 30, 2004

Exhibit 31.1

Certification of the Chief Executive Officer
Pursuant to
Rules 13a-14(a) and 15d-14(a) under the Exchange Act

I, Joseph Cross, certify that:

1. I have reviewed this annual report on Form 10-K of Nanophase Technologies Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of then end of the period covered by this report based on such evaluation; and

(c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent function):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 30, 2004

/s/ JOSEPH E. CROSS

Joseph E. Cross
Chief Executive Officer

Exhibit 31.2

Certification of the Chief Financial Officer
Pursuant to
Rules 13a-14(a) and 15d-14(a) under the Exchange Act

I, Jess Jankowski, certify that:

1. I have reviewed this annual report on Form 10-K of Nanophase Technologies Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of then end of the period covered by this report based on such evaluation; and

(c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent function):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 30, 2004

/s/ JESS A. JANKOWSKI

Jess A. Jankowski
Acting Chief Financial Officer

Exhibit 32

Certification Pursuant to 18 U.S.C. Section 1350
(as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002)

In connection with this annual report of Nanophase Technologies Corporation (the "Company") on Form 10-K for the year ending December 31, 2003 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Joseph E. Cross, Chief Executive Officer of the Company, and Jess A. Jankowski, Acting Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to our knowledge:

1. The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: March 30, 2004

/s/ JOSEPH E. CROSS

Joseph E. Cross
Chief Executive Officer

/s/ JESS A. JANKOWSKI

Jess A. Jankowski
Acting Chief Financial Officer