

NANOPHASE TECHNOLOGIES CORPORATION

Form S-3

May 22, 2007

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As filed with the Securities and Exchange Commission on May 22, 2007

Registration No. 333- _____

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549**

**FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

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

Delaware
(State or other jurisdiction of
incorporation or organization)

36-3687863
(I.R.S. Employer Identification No.)

**NANOPHASE TECHNOLOGIES CORPORATION
1319 Marquette Drive
Romeoville, Illinois 60446
(630) 771-6708**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**JOSEPH E. CROSS, CHIEF EXECUTIVE OFFICER
NANOPHASE TECHNOLOGIES CORPORATION
1319 Marquette Drive
Romeoville, Illinois 60446
(630) 771-6700**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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(312) 201-2555 (fax)**

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Calculation of registration fee

| Title of Each Class of Securities to be Registered (1) | Amount to be Registered | Proposed Maximum Aggregate Offering Price (2) | Amount of Registration Fee (3) |
|---|-------------------------------|---|--------------------------------------|
| Common stock | | | |
| Total | 2,000,000 | \$ 12,340,000 | \$ 378.84 |

(1) There are being registered hereunder by the Registrant 2,000,000 shares of common stock of the Registrant as shall be offered at prices and on terms to be determined at the time of each offering.

(2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) of the Securities Act of 1933, as amended. The proposed maximum aggregate offering price is

based upon the average of the high and low asked prices of the Registrant's common stock on May 18, 2007 as reported on the Nasdaq Global Market.

- (3) Calculated pursuant to Rule 457(c) of the rules and regulations under the Securities Act of 1933, as amended.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(A) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SECURITIES AND EXCHANGE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(A), MAY DETERMINE.

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THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. WE MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THE PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND IT IS NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

Subject to Completion, dated May 22, 2007

PROSPECTUS

2,000,000

**NANOPHASE TECHNOLOGIES CORPORATION
COMMON STOCK**

We may offer from time to time up to an aggregate of 2,000,000 shares of common stock, at prices and on terms to be determined at the time of offering, with an indeterminable aggregate principal amount.

When we offer securities pursuant to this prospectus, we will deliver to you this prospectus as well as a prospectus supplement setting forth the specific terms of the securities being offered. We urge you to read carefully this prospectus and the accompanying prospectus supplement before you make your investment decision.

Our common stock is traded on the Nasdaq Global Market under the symbol **NANX**. Any common stock sold pursuant to a prospectus supplement will be listed on such exchange, subject to official notice of issuance. On May 18, 2007, the closing price of the common stock, as reported on the Nasdaq Global Market, was \$6.29 per share.

We will sell these securities directly to our stockholders or to purchasers or through agents on our behalf or through underwriters or dealers as designated from time to time. If any agents or underwriters are involved in the sale of any of these securities, the applicable prospectus supplement will provide the names of the agents or underwriters and any applicable fees, commissions or discounts.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. SEE **RISK FACTORS** BEGINNING ON PAGE 10 OF THIS PROSPECTUS.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is _____, 2007.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement filed by us with the Securities and Exchange Commission, or Commission, utilizing a shelf registration process. Under this shelf process, we may, from time to time, sell up to 2,000,000 of any combination of securities described in this prospectus in one or more offerings at prices and on terms to be determined at the time of each offering. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any applicable prospectus supplement together with additional information described below under the heading **Where You Can Find More Information**. As used in this prospectus, company, we, our and us refer to Nanophase Technologies Corporation, except where the context otherwise requires or as otherwise indicated.

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus and the accompanying supplement to this prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or the accompanying prospectus supplement as if we had authorized it. This prospectus and the accompanying supplement to this prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus and the accompanying supplement to this prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and the supplement to this prospectus is correct on any date after their respective dates, even though this prospectus or a supplement is delivered or securities are sold on a later date.

WHERE YOU CAN FIND MORE INFORMATION ABOUT US

We file annual, quarterly and special reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's web site at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's public reference room at room 1024, 450 Fifth Street, N.W., Washington, D.C. Please call the SEC at 1-800-732-0330 for further information on the public reference room.

The SEC allows us to incorporate by reference the information we file with them, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below (and any amendments thereto) and any future filings made with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 until the offering under this registration statement is completed or withdrawn:

Annual Report on Form 10-K for the fiscal year ended December 31, 2006 filed March 14, 2007;

Quarterly Report on Form 10-Q for the quarter ended March 31, 2007 filed May 10, 2007;

Current Reports on Form 8-K filed April 12, 2007; April 26, 2007; and April 30, 2007; and

The description of our common stock contained in our registration statement on Form 8-A, including any amendments or reports filed to update such information.

The information incorporated by reference into this prospectus is an important part of this prospectus. Any statement contained in an incorporated document shall be deemed to be modified or superseded for purposes of the registration statement or this prospectus to the extent that a statement contained herein or in any other subsequently filed incorporated documents or in an accompanying prospectus supplement modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as modified or superseded, to constitute a part of this prospectus.

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To obtain a copy of these filings at no cost, you may telephone us at 630-771-6708 or write us at Investor Relations Department, Nanophase Technologies Corporation, 1319 Marquette Drive, Romeoville, Illinois 60446. Unless otherwise requested, exhibits to an incorporated document will not be provided unless the exhibit is specifically incorporated by reference into this prospectus.

In addition, we make available free of charge through our website at <http://www.nanophase.com> our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the SEC. Other than the information expressly incorporated by reference into this prospectus, information on, or accessible through, our website is not a part of this prospectus, any prospectus supplement or the registration statement of which this prospectus is a part.

References in this prospectus and any prospectus supplement to our common stock include the associated preferred stock purchase rights under our 1998 Rights Agreement, as amended.

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PROSPECTUS SUMMARY

The following summary is qualified in its entirety by reference to, and should be read in conjunction with, the more detailed information appearing elsewhere in this prospectus or incorporated by reference herein. Investors should also carefully consider the information set forth under **Risk Factors** beginning on page 10.

GENERAL COMPANY INFORMATION

We are a nanomaterials developer and commercial manufacturer and produce engineered nanomaterial products for diverse markets – sunscreens, personal care, architectural coatings, industrial coating ingredients, plastic additives, water filtration, DNA bio-sensors, semiconductor polishing, optics polishing and other markets. Additionally, new markets and applications are constantly emerging and being developed on a global scale. We market our products globally – U.S, Europe and Asia. The Company was incorporated in Illinois on November 25, 1989, and became a Delaware corporation on November 30, 1997. The Company’s common stock trades on the Nasdaq Global Market under the symbol NANX.

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

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

NANOMATERIALS

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

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

Nanomaterials are an important and enabling part of the diverse field of nanotechnology. The properties of nanomaterials, and hence their ultimate application performance and value, depend on the composition, size, shape, structure and surface chemistry of their constituent nanoparticles, as well as the production process used in their fabrication and other key parameters. The Company’s technologies for engineering and manufacturing nanomaterials control these critical parameters resulting in nanomaterials that we believe demonstrably offer superior performance in many applications.

Nanomaterials have applications in diverse global markets where they are incorporated into a process, such as semiconductor polishing, or a product, such as an industrial coating to prevent UV degradation or significantly improve wear resistance. Multiple markets exist for our products since nanomaterials offer advantages in many applications, such as improved performance, longer wear or product life, lower overall product cost, or in the development of new products or processes.

THE COMPANY’S TECHNOLOGIES

We have created an integrated platform of commercial nanomaterial technologies that are patented, patent-pending, or proprietary and designed to deliver a nanomaterial solution for a targeted market or a specific customer application. The Company’s platform provides flexibility and capability to engineer nanomaterials that meet a customer’s performance requirements and deliver its nanomaterial solutions in a readily usable format. Our

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technologies have been demonstrably scalable and robust, having produced over 400 metric tons annually.

The Company's nanomaterials platform begins with two distinct manufacturing processes (PVS and NanoArc Synthesis) to make nanomaterials or nanoparticles. These technologies allow us to control critical nanomaterial properties (composition, size, shape, structure, surface chemistry) and engineer those to meet application performance. Compared to other major known global nanoparticle processes, the Company believes that its plasma-produced particles have a unique set of bulk and surface properties and are produced as nonporous, dense, discrete single crystals. We currently have the capacity to produce over a million pounds of nanomaterials annually.

We have developed patented and proprietary technology to coat or surface treat nanoparticles to further engineer surface chemistry by two main processes. For performance in many applications, such as sunscreens, this technology is vital to ensure formulation compatibility and, in some cases, optimal application performance. The Company has the capacity to coat or surface treat nanoparticles at a rate of about a ton every eight hours and delivers over 300 tons of surface engineered nanoparticles to its customers annually. As an example, we sell coated nanomaterials that are used by major global consumer products companies for sunscreens and personal care products.

We also have developed proprietary technology to disperse nanoparticles in both aqueous and several organic solvent systems. Due to its technologies, the Company is able to achieve highly stable dispersions at high weight loading (18-50% by weight), which are both market advantages. Dispersed nanomaterials are desired by many customers for use in their processes or products due to the ease of handling. As examples, dispersed nanomaterials are used in architectural coatings, industrial coatings, plastic additives and semiconductor polishing.

As markets continue to develop and grow, the Company believes that customers' preferred delivery formats will likely be coated or dispersed nanomaterials. We believe we are well positioned with our platform of integrated commercial nanomaterial technologies. The Company plans to maintain and evolve its intellectual property and technologies to remain at the forefront of nanomaterials development.

We have steadily expanded both our patented technologies in the U.S. and internationally, and our ability to commercially utilize 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, pending patents and proprietary improvement of the Company's technologies and manufacturing processes to reduce variable manufacturing cost and improve gross margins.

MARKETING

The Company sells its products to markets using a dual strategy of market partners and customers. Markets are selected based on the Company's assessment of the amount of market-pull and the product value proposition for its nanomaterial products to avoid situations that are actually a technology-push with an accompanying unacceptable probability of market success.

The Company's market partners currently include BASF Corporation (BASF), a \$50+ billion global chemical company; Rohm & Haas Electronic Materials CMP Technologies, part of an \$8 billion global chemical company; Altana Chemie, a \$1+ billion chemical company who is a leader in coating and plastic additives; and Alfa Aesar, a division of Johnson Matthey. Each market partner is viewed as a leader in its respective markets with recognized brands and global sales reach. The Company has long-term exclusive relationships with each of its market partners. Market partners incorporate the Company's nanomaterial products into their own products and/or sell the Company's nanomaterial products into specific markets.

Market partners offer the Company several advantages. We are able to leverage our sales and distribution capabilities by using those of our market partners to sell our products globally and reach markets that would be difficult or unattainable for the Company alone. The Company is also able to leverage its new nanomaterial product development capabilities by collaborating with market partners' application development scientists and engineers. The Company has current products with each market partner, in some cases multiple products, and has focused new nanomaterial product development based on the market partners' knowledge and expertise in each market and product application. The Company anticipates that revenue generation from current products will continue growing while new revenues will be generated in the future through focused new product development and market introduction through

its market partners. We also anticipate developing new markets with new market partners.

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BASF markets and distributes the Company's nanomaterials for sunscreens (beach wear and daily wear products) and personal care under the Z-Cote brand to consumer products companies globally. The Company's revenues from these nanomaterial products grew 23% in 2005 and 13% in 2006 and continuing growth is expected. We have manufactured and shipped over 1,500 metric tons of Z-Cote products.

During 2005, the Company was designated a BASF Strategic Development Partner for new products. In the same year, BASF and the Company launched a second line of sunscreen and personal care nanomaterials under the Z-Cote MAX brand specifically targeted for European and Asian markets. During 2006, BASF and the Company launched a new product, T-Lite MAX, for the sunscreen market and anticipate launching another new sunscreen product during 2007. Additional new product development is also underway for potential personal care products.

During 2000, BASF loaned the Company \$1.3 million to purchase and install production equipment to produce nanomaterial products for the Z-Cote brand. As part of the Company's business model, the Company expects its market partners to fund equipment that is primarily dedicated to produce their products. The Company repays such loans through a sales discount on product over time. The BASF note was retired in 2006.

Rohm & Haas Electronic Materials CMP Inc. (RHEM) uses the Company's nanomaterial products to manufacture slurry to polish semiconductors for the STI, SOL, and ILD0 technology nodes. RHEM's slurry products are marketed and used globally by semiconductor manufacturers. In 2005, RHEM awarded the Company its Excellence in Partnership award and during 2006 made a \$5 million equity investment in the Company for its exclusive use of nanomaterial products for semiconductor slurries.

Altana Chemie, and its subsidiary BYK Chemie, use the Company's nanomaterial products as ingredients and additives for paints, coatings, polymers, plastics, inks and sealants under its NanoBYK brand. Currently, there are approximately eighteen products being distributed globally to companies in these markets with plans to introduce more new products during 2007. Altana Chemie made a \$10 million equity investment in the Company during 2004 to exclusively obtain the Company's nanomaterial products for the noted markets, with limited exceptions. Altana Chemie also loaned the Company \$1.6 million to purchase and install nanomaterials production equipment during 2006 to support capacity requirements related to volume growth.

Alfa Aesar is a global distributor of our branded nanomaterials and nanomaterial dispersions to the research and development community. Through catalogs, websites, and a dedicated nanomaterials brochure, Alfa Aesar markets approximately 33 of our nanomaterial products to the global development community. The Company anticipates that as new products or processes are developed using our nanomaterial products, increasing demand may have a positive impact on revenue growth.

In addition to the Company's market partners, we utilize market-focused business development to drive new product applications and customers. Business development includes evaluation and qualification of potential markets, identification of potential lead customers, and developing a strategy for successful market penetration.

The Company collaborates with potential customers to develop a nanomaterials solution for their specific application. This approach increases the probability of application success, allows the Company to use its integrated platform of nanomaterial technologies to optimize a nanomaterial solution for the product application, and reduces the time-to-market. Nanophase's application scientists work along with the business development and sales team and the customer's new product developers to develop a nanomaterial solution to meet the customer's performance demands.

In addition to the applications with market partners, the Company currently has customers using its nanomaterial products for DNA Bio-Sensors, water filtration, textile coatings, architectural coatings, optics polishing, LCD screen polishing and other applications.

TECHNOLOGY AND ENGINEERING

Consisting of research and development, process engineering and advanced engineering groups, the Company's focus is in three major areas: 1) application development for its nanomaterial products; 2) creating or obtaining additional core nanomaterial technologies, or nanomaterials, that have the capability to serve multiple markets; 3) continuing to improve the Company's core technologies to improve operations and reduce costs.

Most of the research and development at the Company is directly related to product development for applications. The Company endeavors to either meet specific customer needs or to develop applications solutions to

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unmet needs in a particular market where its materials may offer a distinct performance advantage. The Company believes that aggressively pursuing applications, inventions and patents will help Nanophase maintain its position as a technical and commercial innovator in nanomaterials.

The Company's total research and development expense, which includes all expenses relating to the technology and advanced engineering groups, during the years ended December 31, 2006, 2005 and 2004 was \$2,127,862, \$1,934,528 and \$1,929,348, respectively. This represents the Company's share of these expenses only and does not take into account amounts spent by our largest customers in support of our partnerships. The Company's future success will depend in large part upon its ability to keep pace with evolving advanced materials technologies and industry standards. Through the five-year period ended December 31, 2006, the Company has had cumulative research and development expenses of approximately \$9.5 million and cumulative expenditures on equipment and leasehold improvements of approximately \$4.7 million. These investments in technology and production capacity and capability have helped to take the Company from a development stage company to full commercialization.

MANUFACTURING OPERATIONS

The Company has manufacturing capacity based in two locations in the Chicago area. At each of these facilities, the Company is able to develop and supply nanomaterials in quantities ranging from grams to metric tons. The Company's facilities are certified to ISO 9001:2000 international standards and are current Good Manufacturing Practices (cGMP) compliant for applicable bulk pharmaceutical manufacturing. The Company's facilities are also certified to the international standard for environmental management, ISO 14001:2004.

All processes are controlled under Lean Six-Sigma discipline with the capability to manufacture precisely to application requirements. Unlike traditional quality control systems, Lean Six Sigma provides methods to re-engineer processes to eliminate non-value added steps and create a system that minimizes errors and defects. The Company's Director of Quality is a certified Six Sigma Master Black Belt. The Company requires that its manufacturing supervisors, engineers and technicians are trained and become, at minimum, certified Green Belts.

The Company's operations employ a cellular, team-based manufacturing approach, where workers operate in work cells, under a Lean Manufacturing environment to continuously advance and improve production capabilities. The Company's manufacturing approach and targeted engineering actions have resulted in continuing process innovations and improvements that have reduced the variable manufacturing cost significantly over the past four years. Using Lean Six Sigma discipline, the Company has been able to achieve 99% customer service levels with no customer returns over the last four years.

Management is committed to a Lean Manufacturing approach, to the extent possible given a certain measure of irregular demand, where the Company is able to reduce excess labor and manage the lowest practical inventory and supply levels in order to minimize working capital demands. This approach complements two of the Company's major operational goals which are to increase nanomaterials output without adding to existing equipment and to continually reduce production costs.

INTELLECTUAL PROPERTY AND PROPRIETARY RIGHTS

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

During 2006, the Company re-evaluated its intellectual property strategy in view of changes at the USPTO and the increasing cost of obtaining and maintaining patents. Based on this analysis, the Company elected to abandon some patents and forgo continuation of some patent applications since the Company had already improved or surpassed the intellectual property described in the abandoned patents and patent applications.

As of March 14, 2007, the Company owned or licensed 18 US patents and patent applications consisting of 10 issued or allowed US patents, 7 pending US patent applications, and 1 licensed US patent. The 10 owned US patents consist of 4 for its nanoparticle synthesis technologies, 2 for its surface treatment technologies and 4 for its nanoparticle applications. The Company's pending US patents consist of 3 in nanoparticle synthesis, 1 in nanoparticle surface treatments, and 3 in nanoparticle applications. Correspondingly, the Company owns 48 foreign patents and patent applications consisting of 23 issued or allowed foreign patents and 25 pending foreign patent

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applications. All of the pending and owned foreign patents are counterparts to domestic filings covering its platform of nanotechnologies. The Company's oldest issued patents will begin to expire in 2009.

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

See Risk Factors for a discussion of risks related to our intellectual property and proprietary rights.

COMPETITION

Within each of its targeted markets and product applications, the Company faces potential competition from advanced materials and chemical companies and suppliers of traditional materials. In many markets, the Company's potential 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 the Company's ability to produce highly engineered products to meet specific performance requirements.

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

With respect to larger producers of nanomaterials, while many of these producers do not currently offer directly competitive products, these companies have greater financial and technical resources, larger research and development staffs and greater manufacturing and marketing capabilities and could begin to compete directly against the Company. In addition, the number of development-stage companies involved in nanocrystalline materials continues to grow on a global basis, posing increasing competitive risks. Many of these companies are associated with university or national laboratories and use chemical and physical methods to produce nanocrystalline materials. 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 government assistance. Management anticipates that foreign competition may play a greater role in the nanomaterials arena in the future.

The Company believes that its nanomaterial technology platform is currently at the forefront of nanomaterials. Relative to potential competition, the Company believes it is well positioned with its platform of integrated commercial nanomaterial technologies and its current plans for continual technology improvement and evolution.

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 that include testing, control and documentation requirements enforced by periodic inspections.

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

In addition, the Company's facilities and all of its operations are subject to the plant and laboratory safety requirements of various environmental and occupational safety and health laws. We believe we are in compliance with all such laws and regulations and to date, those regulations have not materially restricted or impeded operations.

The Company has taken a responsible, proactive approach to Environmental Health and Safety by implementing appropriate procedures and processes to have its facilities certified to ISO 14001, American National

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Standard, Environmental Management System Requirements. The Company is also involved with leading industry groups that are defining nanomaterial standards and protocols. These currently include the ASTM International Committee on Nanotechnology, the National Pollution Prevention and Toxics Advisory Committee TSCA Voluntary Program, the American National Standards Institute (ANSI), and participate in FDA reviews relative to cosmetic applications. The Company has a fulltime, advanced degreed professional to manage government regulation compliance and EH&S.

EMPLOYEES

Effective January 8, 2007, the Company hired Kevin J. Wenta as its Executive Vice President of Sales and Marketing. He brings twenty years of business development, sales, marketing, finance and operations experience to Nanophase. Prior to joining the company, Mr. Wenta was a Partner at Accenture, a global consultancy. Previous to that he was a General Manager at Eastman Chemical Company and held the position of Director of Corporate Strategy. Previous experience also includes positions at ChemConnect (formerly CheMatch), ARCO and Shell Chemical. Mr. Wenta holds a B.S. degree in Chemical Engineering from the University of Texas at Austin and a M.B.A. degree from the University of Chicago.

On December 31, 2006, the Company had a total of 60 full-time employees, 11 of who hold advanced degrees. The Company has no collective bargaining agreements or relationships.

BACKLOG

The Company 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. The Company 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 quantities actually purchased by the customer, as well as the shipment schedules, are frequently revised during the agreement term to reflect changes in the customer's needs. The Company does not believe that such agreements are meaningful for determining backlog amounts.

BUSINESS SEGMENT AND GEOGRAPHICAL INFORMATION

Revenue from international sources approximated \$664,500, \$1,094,200 and \$673,900 for the years ended December 31, 2006, 2005 and 2004, respectively. As part of its revenue from international sources, the Company recognized approximately \$249,800 and \$59,515 in product revenue from several German and Taiwan companies respectively, and \$300,000 in other revenue from a technology license fee from its Japanese licensee for the year ended December 31, 2006. Revenue from these same international sources approximated \$479,400, \$220,200 and \$306,800 for the year ended December 31, 2005, compared to \$299,200, \$1,900 and \$322,500 for the same period in 2004, respectively. The \$300,000 technology license fee typically received every twelve months from our Japanese licensee is included in each of the three years presented.

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

KEY CUSTOMERS

A limited number of key customers account for a substantial portion of the Company's commercial revenue. In particular, revenue from BASF, the Company's new significant customer in architectural coatings and RHEM constituted approximately 56.1%, 22.1% and 9.5%, respectively, of the Company's 2006 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 two of these 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. See Risk factors below for additional discussion.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

We want to provide investors with more meaningful and useful information. As a result, this prospectus 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 our current expectations of the future results of our operations, performance and achievements. Forward-looking statements are covered under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. We have tried, wherever possible, to identify these statements by using words such as anticipates, believes, estimates, expects, plans, intends and similar expressions. These statements reflect our current beliefs and are based on information now available to us. Accordingly, these statements are subject to certain risks, uncertainties and contingencies that could cause our actual results, performance or achievements in 2007 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 our dependence on a limited number of key customers; uncertain demand for, and acceptance of, our nanomaterials; our manufacturing capacity and product mix flexibility in light of customer demand; our limited marketing experience; changes in development and distribution relationships; the impact of competitive products and technologies; our dependence on patents and protection of proprietary information; the resolution of litigation in which we may become involved; and other risks set forth under the caption Risk Factors below. You should not place undue reliance on any forward-looking statements. Except as required by federal securities laws, we undertake no obligation to update or revise these forward-looking statements to reflect new events or uncertainties.

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RISK FACTORS

This offering involves a high degree of risk. Before making an investment decision, you should carefully consider the following risks and the risks set forth in the supplement which accompanies this prospectus and in our periodic reports on Form 10-K and Form 10-Q which have been filed with the SEC and are incorporated by reference into this prospectus. The trading price of our common stock could decline due to any of these risks, and you could lose all or part of your investment. You also should refer to the other information appearing elsewhere in this prospectus, or incorporated by reference into this prospectus.

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

We have only a limited operating history. We were formed in November 1989 and began our commercial nanomaterials operations in January 1997. We have not yet generated a significant amount of revenue from our nanomaterials 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 \$6.45 million in 2004, \$5.38 million in 2005 and \$5.18 million in 2006. As of December 31, 2006, we had an accumulated deficit of approximately \$62.74 million and could expect to continue to incur losses on an annual basis through at least the end of 2007. 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 long-term 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.

Revenue from BASF Corporation, the Company's new significant customer in architectural coatings and RHEM, accounted for approximately 88% of total revenue for the year ended December 31, 2006, and revenue from the same three customers accounted for approximately 79% of total revenue in 2005. For the years ended December 31, 2006 and 2005, BASF accounted for 56% and 66% 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 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 BASF contain certain order requirements, the only repercussion under the agreements for BASF missing the order requirements is that we would be freed from the exclusivity obligations under the BASF 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,

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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. Going forward, 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 our customers' products such as sunscreens, architectural coatings, polishing slurries, personal care, and to a lesser extent, medical diagnostics, abrasion-resistant coatings for flooring, and other products. 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 nanomaterials often require longer adoption cycles than 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 demonstrate to our potential customers the performance advantages and economic value of our nanomaterials 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 frequently depend on collaborative development relationships with our customers and do not have a substantial direct sales force or an established distribution network apart from the distribution networks of our strategic partners. If we are unable to initiate or sustain such collaborative relationships or if the terms of these relationships limit the distribution of our products or if our strategic partners are unable to distribute our products efficiently, then we may be unable to independently develop, manufacture or market our current and future nanomaterials or applications.

We have established, and will continue to pursue, strategic relationships with many of our customers and do not have a substantial direct sales force or an established distribution network (other than distribution arrangements for research samples). Through these relationships, we seek to develop new applications for our nanomaterials and share development and manufacturing resources. We also seek to coordinate the development, manufacture and marketing of our nanomaterials products. Future success will depend, in part, on our continued relationships with these customers and our ability to enter into similar strategic 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 strategic development relationships with our competitors. These customers may also 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 with others. These relationships generally can be terminated unilaterally by customers.

Additionally, except for our research quantities distribution agreement with Alfa Aesar, these customers generally require exclusive distribution arrangements within the field of application covered by our agreement with these customers, and the very nature of these strategic relationships limits the distribution of our products to the distribution networks available to our strategic relationship partners. In addition, the development agreements with some of our larger customers contain provisions that require us to license our intellectual property to these

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customers on disadvantaged terms and/or sell 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 we are unable to initiate or sustain such collaborative relationships or if the terms of these relationships materially limit our access to distribution channels for our products, then we may be unable to independently develop, manufacture or market our current and future nanomaterials or applications.

If commodity metal prices increased at such a rate that we were unable to recover lost margins on a timely basis or that our products became uncompetitive in their current marketplaces, our financial and liquidity position and results of operations would be substantially harmed.

Many of our significant raw materials come from commodity metal markets that may be subject to rapid price increases. While we generally pass commodity price increases on to our customers, it is possible that, given our limited customer base and the limited control we have over it, commodity metal prices could increase at such a rate that could hinder our ability to recover lost margins from our customers on a timely basis. It is also possible that such drastic cost increases could render some of our materials uncompetitive in their current marketplaces when considered relative to other materials on a cost benefit basis. If either of these potential results occurred, our financial and liquidity position and results of operations would be substantially harmed.

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 insurance, this insurance may not adequately compensate us for all losses that we may incur and would not compensate us for any interruption in our business.

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 nanomaterials 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 substantial quantities. 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 (USPTO) 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.

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Moreover, at times, attempts may be made to challenge the prior issuance of our patents. For example, the USPTO has granted a third-party request for re-examination with respect to one patent relating to one of our nanoparticle manufacturing processes. On September 7, 2005, our representatives conducted an interview with the Examiner assigned to the re-examination at the USPTO, resulting in the Examiner preparing an interview summary indicating that rejections to issued claims may be formally withdrawn. However, prior to the USPTO issuing a formal notice confirming patentability, the same unidentified third party filed a second request for re-examination of the patent (which second request, the USPTO has since denied). Nonetheless, a second interview was conducted, resulting in an amendment to all patent claims. Thereafter, a third request for re-examination was filed and granted by the USPTO. We subsequently conducted a third interview with the Examiner and responded to the third request. While we will continue to vigorously defend our patent position, we may not ultimately be successful in maintaining the scope of the claims of this patent during re-examination. While the Company intends to vigorously defend its patent protection against such claims, it does not believe that these patent claims pose a risk of material harm to the Company's business prospects or competitive positions. If the scope of the Company's claims protected by the patent in question were ultimately reduced through the pending re-examination proceedings before the USPTO, the Company would still continue to be able to conduct its business as currently conducted, including the use of the technology that is the subject of the patented claims. A reduction in the scope of the claims protected by the Company's patent in question would limit the Company's ability to assert infringement claims and suits against other parties using the same or sufficiently similar nanomaterial manufacturing process technology. The Company believes that while patent protection is a valuable asset, a reduction in the scope of the claims protected by the Company's patent in question would not materially alter the competitive environment in which the Company operates or result in a material loss.

Furthermore, litigation may be necessary to enforce our intellectual property rights, to protect our trade secrets, to determine 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.

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The markets we serve are 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 nanomaterials 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 nanomaterials 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 nanomaterials 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 sell 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 securities or enter into loan agreements. To the extent that we 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 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 of ownership.

We currently have supply agreements with BASF and RHEM that contain provisions which could potentially result in a mandatory license of technology and sale of production equipment to the customer providing capacity sufficient to meet its production needs. Under our supply agreement with BASF, a triggering event also would occur if:

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, or

the acceleration of any debt maturity having a principal amount of more than \$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. Under another of our supply agreements with BASF, upon the breach of certain contractual obligations to BASF, we would be required to sell BASF certain production equipment at the greater of 30% of the original book value of such equipment and any associated upgrades to it or 115% of the equipment's net book value.

We believe that we have sufficient cash balances to avoid the first triggering event for the foreseeable future. If a triggering event were to occur and BASF elected to proceed with the license 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

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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 our 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 our 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, or if we are unable to implement a succession plan to prepare qualified individuals to assume key roles upon any loss of our key personnel, 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 nanomaterials product applications are alleged to be defective or cause harmful effects to humans or physical environments. Because our nanomaterials are used in other companies' products, to the extent our customers become subject to suits relating to their products, such as cosmetic, skin-care, architectural coatings and personal-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 nanomaterials.

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 and dispersion 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 both the amount of our liability insurance and 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 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 important initiatives.

The manufacture and use of certain products that contain our nanomaterials are subject to extensive 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

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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 24,088 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 (DCGL) relating to business combinations with related stockholders and the terms of our stock option plans relating to changes of control 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 May 18, 2007, there are:

16,070,294 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,

1,410,490 shares of common stock that may be issued on the exercise of stock options outstanding and exercisable under our equity incentive plan;

906,002 shares of common stock that were issued pursuant to our September 8, 2003 private placement and the related warrant which was exercised on September 2, 2004. The resale of these shares has been registered pursuant to a Registration Statement on Form S-3 which was declared effective by the Securities and Exchange Commission on August 13, 2004; and

1,256,281 shares of common stock that were issued pursuant to our March 23, 2004 private placement and may be registered for resale after March 23, 2006 pursuant to a Registration Statement on Form S-3 which was filed with the Securities and Exchange Commission on February 5, 2007 and declared effective on May 18, 2007.

847,918 shares of common stock that were issued pursuant to our August 25, 2006 private placement and may be registered for resale after August 25, 2008 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.

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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 1, 2007, Bradford T. Whitmore, together with his affiliates, Grace Brothers, Ltd. and Grace Investments, Ltd., beneficially owned approximately 19% 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 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. This warrant was exercised on September 2, 2004 to acquire 453,001 newly issued shares of common stock. The share price for the common stock was determined based on the fifteen-day market closing average for our stock ending September 5, 2003. On September 8, 2003 and September 2, 2004 the closing sale price of our common stock as reported on NASDAQ, was \$5.50 and \$5.49 respectively, 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. The share price for the common stock was determined based on the ten-day market closing average for our stock ending March 18, 2004. On March 23, 2004 the closing sale price of our common stock, as reported on NASDAQ, was \$8.26 per share. On August 25, 2006 we sold 847,918 shares of our common stock to Rohm and Haas Electronics Materials CMP Holdings, Inc. at a purchase price of \$5.8968 per share. The share price for the common stock was determined based on the twenty-five-day market closing average for our stock ending August 21,

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2006. On August 25, 2006 the closing price of our common stock, as reported on NASDAQ, was \$6.71 per share. Each of these averages was negotiated with the respective investors in an effort to approximate a market price, given volatility. Each of these issuances of stock, at their respective subsequent closing dates, represented below then-current market pricing (looking only at that closing date for this measurement) and, in that context, 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.

USE OF PROCEEDS

Unless otherwise specified in the prospectus supplement, we intend to use the net proceeds from the sale of the securities offered by this prospectus and any accompanying prospectus supplement for (1) acquiring, installing and commissioning equipment, and expanding the Company's facilities, to support anticipated increases in the volume of nanomaterials currently being produced, and in expected development of new nanomaterials, and (2) for other general corporate purposes, which might include working capital, increase in technology development, increase in business development, additional capital expenditures, the repayment of indebtedness and acquisitions. Pending use for these purposes, we expect to invest proceeds from the sale of the securities in short-term marketable securities. The precise amount and timing of sales of any securities will be dependent on market conditions and the availability and cost of other funds to us.

DILUTION

If the securities offered hereby are common stock, the prospectus supplement will include a dilution table setting forth any increase in net tangible book value to existing stockholders and any dilution to new investors based on the proposed number of shares of common stock to be offered and the assumed public offering price at the time of such offering.

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DESCRIPTION OF CAPITAL STOCK

GENERAL

This prospectus describes the general terms of our capital stock. For a more detailed description of these securities, you should read the applicable provisions of Delaware law and our certificate of incorporation and bylaws. When we offer to sell a particular series of these securities, we will describe the specific terms of the series in a supplement to this prospectus. Accordingly, for a description of the terms of any series of securities, you must refer to both the prospectus supplement relating to that series and the description of the securities described in this prospectus. To the extent the information contained in the prospectus supplement differs from this summary description, you should rely on the information in the prospectus supplement.

Under our certificate of incorporation, the total number of shares of all classes of stock that we have authority to issue is 30,024,088 consisting of 30,000,000 shares of common stock, par value \$0.01 per share, and 24,088 shares of preferred stock, par value \$0.01 per share.

COMMON STOCK

As of May 18, 2007 we had 19,080,495 shares of common stock outstanding. The holders of our common stock are entitled to one vote for each share on all matters voted on by stockholders. The holders of our common stock do not have cumulative voting rights, which means that holders of more than one-half of the shares voting for the election of directors can elect all of the directors then being elected. Subject to the preferences of any of our outstanding preferred stock from time to time outstanding, the holders of our common stock are entitled to a proportional distribution of any dividends that may be declared by the board of directors. In the event of a liquidation or dissolution of Nanophase, the holders of our common stock are entitled to share equally in all assets remaining after payment of liabilities and any payments due to holders of any outstanding shares of our preferred stock from time to time outstanding. The outstanding shares of our common stock are, as will the shares offered by this prospectus be, when issued, fully paid and nonassessable. The rights, preferences and privileges of holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any of our outstanding preferred stock.

PREFERRED STOCK

Our board of directors has the authority to issue up to 24,088 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 our shareholder rights plan discussed below. No shares of preferred stock are presently outstanding, and no shares are expected to be issued except in connection with the shareholder rights plan referred to below. The issuance of preferred stock with voting and conversion rights may adversely affect the voting power of the holders of our common stock.

SHAREHOLDER RIGHTS PLAN

In October 1998, we declared a dividend of one preferred stock purchase right for each outstanding share of Company common stock on November 10, 1998. 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 rights further provide that each right will entitle the holder, upon the occurrence of certain specified events (and without the necessity of purchasing the one ten-thousandth of a share of the Company's Series A Junior Participating Preferred Stock), to purchase from us, 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 we are merged or which acquires 50% or more of our assets or earnings power, common stock of such other entity having a value of twice the purchase price. The rights are not presently exercisable. The rights generally become exercisable if a person or group acquires 35% or more of our common stock or commences a tender offer that could result in such person or group owning 35% or more of our common stock. In general, the rights may be redeemed by us at a price of \$0.01 per right. The rights expire on October 28, 2008.

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ANTI-TAKEOVER PROVISIONS

As a corporation organized under the laws of the State of Delaware, we are subject to Section 203 of the General Corporation Law of the State of Delaware, which restricts our ability to enter into business combinations with an interested stockholder or a stockholder owning 15% or more of our outstanding voting stock, or that stockholder's affiliates or associates, for a period of three years. These restrictions do not apply if:

prior to becoming an interested stockholder, our board of directors approves either the business combination or the transaction in which the stockholder becomes an interested stockholder;

upon consummation of the transaction in which the stockholder becomes an interested stockholder, the interested stockholder owns at least 85% of our voting stock outstanding at the time the transaction commenced, subject to exceptions; or

on or after the date a stockholder becomes an interested stockholder, the business combination is both approved by our board of directors and authorized at an annual or special meeting of our stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock not owned by the interested stockholder.

Some provisions of our certificate of incorporation and bylaws could also have anti-takeover effects. These provisions which are described below:

permit the board of directors to increase its own size and fill the resulting vacancies;

provide for a board comprised of three classes of directors with each class serving a staggered three-year term;

authorize the issuance of preferred stock in one or more series; and

prohibit stockholder action by written consent.

These provisions are intended to enhance the likelihood of continuity and stability in the composition of the policies formulated by the board of directors. In addition, these provisions are intended to ensure that the board of directors will have sufficient time to act in what it believes to be in the best interests of Nanophase and its stockholders. These provisions also are designed to reduce our vulnerability to an unsolicited proposal for a takeover of Nanophase that does not contemplate the acquisition of all of our outstanding shares or an unsolicited proposal for the restructuring or sale of all or part of Nanophase. The provisions are also intended to discourage some tactics that may be used in proxy fights.

CLASSIFIED BOARD OF DIRECTORS

The certificate of incorporation provides for the board of directors to be divided into three classes of directors, with each class as nearly equal in number as possible, serving staggered three-year terms. As a result, approximately one-third of the board of directors will be elected each year. The classified board provision will help to assure the continuity and stability of the board of directors and the business strategies and policies of Nanophase as determined by the board of directors. The classified board provision could have the effect of discouraging a third party from making a tender offer or attempting to obtain control of Nanophase. In addition, the classified board provision could delay stockholders who do not agree with the policies of the board of directors from removing a majority of the board of directors for two years.

NO STOCKHOLDER ACTION BY WRITTEN CONSENT; SPECIAL MEETINGS

The certificate of incorporation provides that stockholder action can only be taken at an annual or special meeting of stockholders and prohibits stockholder action by written consent in lieu of a meeting. The certificate of incorporation also provides that special meetings of stockholders may be called only by the board of directors, its chairman, the president or the secretary of Nanophase. Stockholders are not permitted to call a special meeting of stockholders or to require that the board of directors call a special meeting.

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NUMBER OF DIRECTORS; REMOVAL; FILLING VACANCIES

The certificate of incorporation provides that the board of directors will consist of between five and nine members, the exact number to be fixed by resolution adopted by affirmative vote of a majority of the board of directors. The board of directors currently consists of seven directors. Further, the certificate of incorporation authorizes the board of directors to fill newly created directorships. Accordingly, this provision could prevent a stockholder from obtaining majority representation on the board of directors by permitting the board of directors to enlarge the size of the board and fill the new directorships with its own nominees. A director so elected by the board of directors holds office until the next election of the class for which the director has been chosen and until his or her successor is elected and qualified. The certificate of incorporation also provides that directors may be removed only for cause and only by the affirmative vote of holders of a majority of the total voting power of all outstanding securities. The effect of these provisions is to preclude a stockholder from removing incumbent directors without cause and simultaneously gaining control of the board of directors by filling the vacancies created by the removal with its own nominees.

TRANSFER AGENT AND REGISTRAR

The Transfer Agent and Registrar for our common stock is LaSalle Bank National Association.

PLAN OF DISTRIBUTION

We may offer and sell the securities described in this prospectus:

through agents;

through one or more underwriters or dealers;

through a block trade in which the broker or dealer engaged to handle the block trade will attempt to sell the securities as agent; but may position and resell a portion of the block as principal to facilitate the transaction;

directly to one or more purchasers (through a specific bidding or auction process or otherwise); or

through a combination of any of these methods of sale.

The distribution of the securities described in this prospectus may be effected from time to time in one or more transactions either:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices relating to the prevailing market prices; or

at negotiated prices (which may potentially raise the dilutive effect of such issuance).

Offers to purchase the securities may be solicited by agents designated by us from time to time. Any agent involved in the offer or sale of the securities will be named, and any commissions payable by us to the agent will be described, in the applicable prospectus supplement. Unless otherwise indicated in the applicable prospectus supplement, any such agent will be acting on a best efforts basis for the period of its appointment. Any agent may be

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deemed to be an underwriter, as such term is defined in the Securities Act of 1933, of the securities so offered and sold.

If we offer and sell securities through an underwriter or underwriters, we will execute an underwriting agreement with the underwriter or underwriters. The names of the specific managing underwriter or underwriters, as well as any other underwriters, and the terms of the transactions, including compensation of the underwriters and dealers, which may be in the form of discounts, concessions or commissions, if any, will be described in the applicable prospectus supplement, which will be used by the underwriters to make resales of the securities. That prospectus supplement and this prospectus will be used by the underwriters to make resales of the securities. If underwriters are used in the sale of any securities in connection with this prospectus, those securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at fixed public offering prices or at varying prices determined by the underwriters and us at the time of sale. Securities may be offered to the public either through underwriting syndicates represented by managing underwriters or directly by one or more underwriters. If any underwriter or underwriters are used in the sale of securities, unless otherwise indicated in a related prospectus supplement, the underwriting agreement will provide that the obligations of the underwriters are subject to some conditions precedent and that with respect to a sale of these securities the underwriters will be obligated to purchase all such securities if any are purchased.

We may grant to the underwriters options to purchase additional securities to cover over-allotments, if any, at the public offering price, with additional underwriting commissions or discounts, as may be set forth in a related prospectus supplement. The terms of any over-allotment option will be set forth in the prospectus supplement for those securities.

If any underwriters are involved in the offer and sale, they will be permitted to engage in transactions that maintain or otherwise affect the price of the securities. These transactions may include over-allotment transactions, purchases to cover short positions created by the underwriter in connection with the offering and the imposition of penalty bids. If an underwriter creates a short position in the securities in connection with the offering, i.e., if it sells more securities than set forth on the cover page of the applicable prospectus supplement, the underwriter may reduce that short position by purchasing the securities in the open market. In general, purchases of a security to reduce a short position could cause the price of the security to be higher than it might be in the absence of such purchases. As noted above, underwriters may also choose to impose penalty bids on other underwriters and/or selling group members. This means that if underwriters purchase securities on the open market to reduce their short position or to stabilize the price of the securities, they may reclaim the amount of the selling concession from those underwriters and/or selling group members who sold such securities as part of the offering.

Neither we nor any underwriter make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the securities. In addition, neither we nor any underwriter make any representation that such underwriter will engage in such transactions or that such transactions, once commenced, will not be discontinued without notice.

If we offer and sell securities through a dealer, we or an underwriter will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. Any such dealer may be deemed to be an underwriter, as such term is defined in the Securities Act of 1933, of the securities so offered and sold. The name of the dealer and the terms of the transactions will be set forth in the applicable prospectus supplement.

We may solicit offers to purchase the securities directly, and we may sell the securities directly to institutional or other investors, who may be deemed an underwriter within the meaning of the Securities Act of 1933 with respect to any resales of those securities. The terms of these sales, including the terms of any bidding or auction process, if utilized, will be described in the applicable prospectus supplement.

We may enter into agreements with agents, underwriters and dealers under which we may agree to indemnify the agents, underwriters and dealers against certain liabilities, including liabilities under the Securities Act of 1933, or to contribute to payments they may be required to make with respect to these liabilities. The terms and conditions of this indemnification or contribution will be described in the applicable prospectus supplement.

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Some of the agents, underwriters or dealers, or their affiliates may be customers of, engage in transactions with or perform services for us in the ordinary course of business.

We may authorize our respective agents or underwriters to solicit offers to purchase securities at the public offering price under delayed delivery contracts. The terms of these delayed delivery contracts, including when payment for and delivery of the securities sold will be made under the contracts and any conditions to each party's performance set forth in the contracts, will be described in the applicable prospectus supplement. The compensation received by underwriters or agents soliciting purchases of securities under delayed delivery contracts will also be described in the applicable prospectus supplement.

Unless otherwise indicated in the applicable prospectus supplement, each series of offered securities will be a new issue of securities with no established trading market, except for our common stock, which is listed on the NASDAQ Global Market. Unless otherwise indicated in the applicable prospectus supplement, we do not expect to list the securities on a securities exchange, except for our common stock, which is listed on the NASDAQ Global Market. Underwriters involved in the public offering and sale of these securities may make a market in the securities. They are not obligated to make a market, however, and may discontinue market making activity at any time. We cannot give any assurance as to the liquidity of the trading market for any of these securities. In order to comply with the securities laws of some states, if applicable, the securities offered hereby will be sold in those jurisdictions only through registered or licensed brokers or dealers. In addition, in some states securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and complied with.

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LEGAL MATTERS

Wildman, Harrold, Allen & Dixon LLP, Chicago, Illinois is giving an opinion of the validity of the issuance of the securities offered in this prospectus.

EXPERTS

The balance sheets of Nanophase Technologies Corporation as of December 31, 2006 and 2005, and the related statements of operations, stockholders' equity, and cash flows for each of the years in the three year period ended December 31, 2006 appearing in Nanophase Technologies Corporation's 2006 Annual Report (Form 10-K) for the year ended December 31, 2006, have been audited by McGladrey & Pullen, LLP, an independent registered accounting firm, as set forth in their report thereon included therein and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

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PART II.
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

| | |
|-----------------------------|--------------|
| SEC Registration Fee | \$ 378.84 |
| Accounting Fees and Expense | \$ 10,000.00 |
| Legal Fees and Expenses | \$ 10,000.00 |
| Miscellaneous | \$ 0.00 |
| Total | \$ 20,378.84 |

All fees and expenses other than the SEC registration fee are estimated. The expenses listed above will be paid by the Company.

Item 15. Indemnification of Officers and Directors

Under Section 145 of the General Corporation Law of the State of Delaware (the "DGCL"), a corporation may indemnify its directors, officers, employees and agents and its former directors, officers, employees and agents and those who serve, at the corporation's request, in such capacities with another enterprise, against expenses (including attorney's fees), as well as judgments, fines and settlements in nonderivative lawsuits, actually and reasonably incurred in connection with the defense of any action, suit or proceeding in which they or any of them were or are made parties or are threatened to be made parties by reason of their serving or having served in such capacity. The DGCL provides, however, that such person must have acted in good faith and in a manner he or she reasonably believed to be in (or not opposed to) the best interests of the corporation and, in the case of a criminal action, such person must have had no reasonable cause to believe his or her conduct was unlawful. In addition, the DGCL does not permit indemnification in an action or suit by or in the right of the corporation, where such person has been adjudged liable to the corporation, unless, and only to the extent that, a court determines that such person fairly and reasonably is entitled to indemnity for costs the court deems proper in light of liability adjudication. Indemnity is mandatory to the extent a claim, issue or matter has been successfully defended.

Our certificate of incorporation provides that to the fullest extent permitted by Delaware law, it shall indemnify and advance indemnification expenses to all of its directors and officers. In addition, the certificate of incorporation provides that to the fullest extent permitted by Delaware law, a director shall not be liable to Nanophase Technologies Corporation or its stockholders for breach of fiduciary duty as a director.

We have entered into indemnification agreements with each director providing for indemnification to the fullest extent permitted by Delaware law.

Item 16. List of Exhibits

(a) Exhibits

- 1* Form of Underwriting or Distribution Agreement.
- 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 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.
- 4.3 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").
- 4.4 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

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- 4.5 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) filed October 29, 2001.
- 4.6 Second Amendment to Rights Agreement dated May 24, 2002 between the Company and LaSalle National Association, as Rights Agent, incorporated by reference to Exhibit 4.7 to the Company's Registration Statement on Form S-3 (File No. 333-90326) filed June 12, 2002.
- 4.7 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 Form 8-K filed September 10, 2003.
- 4.8 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.
- 4.9 Stock Purchase Agreement dated March 23, 2004 between the Company and Altana Chemie AG, incorporated by reference to Exhibit 4.10 to the Company's Annual Report on Form 10-K for the year ended December 31, 2003 (the 2003 10-K).
- 4.10 Registration Rights Agreement dated March 23, 2004 between the Company and Altana Chemie AG, incorporated by reference to Exhibit 4.11 to the 2003 10-K.
- 4.11 2004 Nanophase Technologies Corporation Equity Compensation Plan, incorporated by reference to Exhibit 4 to the Company's Registration Statement on Form S-8 (File No. 333-119466) filed October 1, 2004.
- 4.12 First Amendment to 2004 Nanophase Technologies Corporation Equity Compensation Plan, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed July 27, 2006.
- 4.13 Form of Stock Option Agreement under the 2004 Equity Plan, incorporated by reference to Exhibit 4.13 to the Company's Annual Report on Form 10-K filed March 15, 2005.
- 4.14 Form of Restricted Share Grant Agreement under the 2004 Equity Plan, incorporated by reference to Exhibit 4.14 to the Company's Annual Report on Form 10-K filed March 15, 2005.
- 4.15 Form of Performance Share Grant Agreement under the 2004 Equity Plan, incorporated by reference to Exhibit 4.15 to the Company's Annual Report on Form 10-K filed March 15, 2005.
- 4.16 2005 Nanophase Technologies Corporation Equity Compensation Plan, incorporated by reference to Exhibit 4 to the Company's Non-Employee Director Restricted Stock Plan, incorporated by reference to Exhibit A to the Company's Definitive Proxy Statement on Form DEF14A filed May 17, 2005.
- 4.17 First Amendment to the Nanophase Technologies Corporation 2005 Non-Employee Director Restricted Stock Plan, incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed January 9, 2006.
- 5.1 Opinion of Wildman, Harrold, Allen & Dixon LLP

- 23.1 Consent of McGladrey & Pullen, LLP
- 23.2 Consent of Wildman, Harrold, Allen & Dixon LLP (included in Exhibit 5.1)
- 24 Power of Attorney (included on signature page)

* To be filed, if necessary, subsequent to the effectiveness of this registration statement by an amendment to the registration statement or incorporated by reference pursuant to a Current Report on Form 8-K in connection with the offering of securities registered hereunder.

(b) Financial Statement Schedule

None

Item 17. Undertakings

The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement: (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933; (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement; (iii) To include any material information with respect to the distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section do not apply if the registration statement is on Form S-3 or Form S-8, and the information required to be included in a post-effective amendment by those paragraphs is conformed in periodic reports filed by the Registrant pursuant to Section 13 or Section 15(d) of the 1934 Act that are incorporated by reference in the registration statement.

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(2) That, for the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof; and (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

The undersigned Registrant undertakes that: (1) for purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of the registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of the registration statement as of the time it was declared effective; and (2) for the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the Registration Certificate of Incorporation, Bylaws, indemnification agreements or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by Registrant of expenses incurred or paid by a director, officer or controlling person of Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, Nanophase Technologies Corporation certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in Romeoville, Illinois as of May 22, 2007.

NANOPHASE TECHNOLOGIES
CORPORATION

/s/ JOSEPH E. CROSS
Joseph E. Cross,
President and Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears immediately below constitutes and appoints Joseph E. Cross or Jess Jankowski or any of them, his or her true and lawful attorney-in-fact and agent, with full power of substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and any and all additional registration statements pursuant to Rule 462(b) under the Securities Act of 1933, as amended, in connection with or related to the offering contemplated by this Registration Statement and its amendments, if any, and to file the same with all exhibits thereto, and other documents in connection therewith, with the Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent or his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities indicated as of May 22, 2007.

| Signature | Title |
|--|---|
| /s/ JOSEPH E. CROSS Joseph E. Cross | President and Chief Executive Officer |
| /s/ JESS JANKOWSKI Jess Jankowski | Chief Financial Officer, Vice President and Corporate Controller (Principal Accounting and Financial Officer) |
| /s/ DONALD PERKINS Donald Perkins | Chairman of the Board |
| /s/ JAMES HENDERSON James Henderson | Director |
| /s/ JAMES McCLUNG James McClung | Director |
| /s/ JERRY PEARLMAN | Director |

Jerry Pearlman

/s/ RICHARD SIEGEL

Director

Richard Siegel

/s/ R. JANET WHITMORE

Director

R. Janet Whitmore

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EXHIBIT INDEX

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| 5.1 | Opinion of Wildman, Harrold, Allen & Dixon LLP |
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