





think tomorrow

Annual Report 2008



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CEO OF NANOSTART AG

MARCO BECKMANN

**Dear Shareholders,**

While the global economy suffered a global recession of historic proportions during 2008, Nanostart AG - where you have entrusted your capital - managed to continue building its business largely untouched by these surrounding events. Our fiscal year 2008, like every year since our company's founding, was profitable. But the story for 2008 is even better than this: With net income of EUR 2.1 million, we reported the highest annual profit in our company's history, despite the intensive costs associated with our current business investment phase. During the year, Nanostart expanded and drove forward into new markets. Furthermore, we were able to pursue our growth objectives without pulling back and to further strengthen our leadership position among nanotechnology investment companies.

For both Nanostart and its shareholders, 2008 was a good year. By way of example, let me talk about some particularly notable developments.

**First mover in Singapore and investment partner of the Singaporean government**

Our business activities in Singapore, which kicked off at the end of 2007 with our initial investment in Curiox, grew tremendously during 2008. The government of

Singapore selected us as one of its preferred investment partners, not least because of the international reputation which we enjoy as a successful venture capital firm specializing in nanotechnology. Together with the National Research Foundation, a Singaporean government agency which plays a vital role in promoting innovation, we will be financing young, highly promising nanotechnology start-ups in the country. To this end we founded our first venture capital fund in Singapore, in which we are co-investing with the government. Furthermore, we were appointed by the government to serve on the committee which decides which Singaporean nanotech start-ups receive government funding.

It delights me to tell you that, through this arrangement, we will now enjoy direct access to the best up-and-coming companies in the high-tech hub of Singapore while they are in an early stage of development and have low valuations. As a starting point to seek out new investment opportunities, our situation could hardly be better. With a local staff of four at Nanostart Asia, our Singapore subsidiary established in April 2008, and our many valuable contacts throughout the region, we are driving Nanostart forward to success in this exciting market while at the same time helping to make Singapore the unrivaled nanotechnology hub of Southeast Asia.



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### **Nano-Cancer® therapy from MagForce close to European regulatory approval**

In Europe, too, we see exciting events ahead. During 2008, Dr. Andreas Jordan, founder of MagForce Nanotechnologies AG, and his team moved forward rapidly toward European regulatory approval of its Nano-Cancer® therapy for the treatment of solid tumors. Following more than 20 years of research and development efforts, the company will this year complete phase II clinical trials, the final step before submission for European regulatory approval, which is anticipated for 2010. It thus hardly comes as surprise that the media world is paying ever more attention to MagForce. There is a good chance that you may have seen an article about MagForce, or even heard about it on television or radio, and that this has given you a good idea of just how revolutionary its new treatment procedure is – and what it may mean for cancer patients. The management of MagForce foresees Nano-Cancer® therapy as the four pillar of cancer treatment, alongside surgery, chemotherapy and radiation.

### **Portfolio companies growing dynamically**

Namos GmbH, a nanotech company in the historical German city of Dresden in which we first invested in early 2008, has developed a proprietary process which, with the help of nanotechnology, reduces the precious metal requirements for producing automotive catalytic converters by roughly one half. The technology, which promises to save platinum costs of several billions dollars each year, has received extensive coverage in the trade press

and beyond. It is a technology with enormous innovative power, and it should thus not come as a great surprise that Namos was announced in June 2009 as winner of the IQ Innovation Awards for Central Germany in the Automotive category. The innovation has likewise met with enormous interest from catalytic converter manufacturers.

It is success of this kind which we see time and again in our portfolio companies. Our U.S. holdings, for example, have repeatedly demonstrated their potential for significant value growth through cooperation agreements with major corporations. A number of our U.S. portfolio companies are making breakthrough advances in environmental technology, or “cleantech” as it is increasingly known, an industry which remains strong even in difficult economic times and which stands to benefit greatly from the new U.S. administration’s clear objectives for environmental policy.

### **Come with us as we shape the future**

Our strategy is crystal clear: We identify young, up-and-coming companies around the globe whose nanotechnology-based products and processes have the potential to make critical contributions to solving challenges of our age, many of them with significant social and humanitarian dimensions. We then invest our capital to develop these into mature businesses. In this way, we not only increase intrinsic company valuations; we also enhance their attractiveness for major industry players, who are constantly on the lookout for innovative but commercially proven technologies and are prepared to pay large sums for these.

Our portfolio companies create big things from the very smallest – not only for the industries and people which benefit from them but also for those who believe in these young companies and, together with us, invest in their futures. It means big things for you, the shareholders of Nanostart. It is by realizing the promise of nanotechnology that you hope to realize superior returns, and this is what we at Nanostart have committed ourselves to.

I would like to take this opportunity to thank you, our shareholders, for the continued confidence which you have placed in Nanostart. To all of our staff, I likewise thank you for your superb work and for personal commitment which on more than a few occasions has gone far beyond the call of duty. Finally, a special thanks to our business partners for the fine and dependable cooperation during 2008.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'M. Beckmann', written in a cursive style.

Marco Beckmann  
Chief executive officer, Nanostart AG  
Frankfurt, Germany, July 2009





SUPERVISORY BOARD OF NANOSTART AG

PROFESSOR WOLFGANG M. HECKL left  
DR. ALFRED KRAMMER  
PROFESSOR MICHAEL FISCHER right

## REPORT OF THE SUPERVISORY BOARD

### Dear Shareholders,

During fiscal year 2008, the supervisory board discharged the ongoing tasks and responsibilities imposed on it by law and by the Company's articles of association (*Satzung*) with regard to the Company's business activities, financial condition and investment plans. As part of this, it regularly advised the executive board (consisting solely of the CEO) as to business policies and other fundamental issues, as well as exercised its supervisory role over the management of the Company, particularly as to whether its decisions and actions are consistent with the Company's business and profit objectives and in conformity with law and regulations. In accordance with Sec. 90 of the German Stock Corporation Act (*Aktiengesetz*), the supervisory board was regularly informed of significant business events during as well as outside of supervisory board meetings, both orally and in writing. There were no changes in the membership of the supervisory board during 2008.

### Significant events pertaining to meetings of the supervisory board

In the course of five meetings, at which all members of the supervisory board were present, the supervisory

board extensively discussed the Company's business situation, its completed and intended investment and exit transactions, its financial statements, its strategy, key personnel issues, and the risk control system put in place by the executive board. Furthermore, the chairman of the supervisory board was in regular contact with the executive board outside of these board meetings and obtained further detailed information on the Company's ongoing business situation, as well as on significant business events and developments.

In addition, the supervisory board reviewed individual business issues of particular importance and decided on matters requiring its approval. During fiscal year 2008, the supervisory board specifically discussed investments in new portfolio companies and sales of existing shareholdings; important developments within portfolio companies, in particular MagForce Nanotechnologies AG and ItN Nanovation AG, and development plans for the overall investment portfolio; staffing of key positions in the Company; the opening of a branch office in Berlin; and the commencement of local business activities in Singapore.

The supervisory board also exercised its supervisory role with regard to individual portfolio companies, receiving detailed reports on the portfolio holdings of Nanostart during supervisory board meetings. The supervisory board was similarly informed by the executive board outside of these meetings of extraordinary events involving individual portfolio companies. Other matters specifically addressed by the supervisory board over the past fiscal year included the preparation of financial statements;



investment planning; the appointment of the external auditor as well as assurance of its independence, as required by law; the determination of issues for special audit attention; and agreement as to fees. In the course of its reviews, it found no irregularities in the established practices of the Company.

In the supervisory board meeting of March 19, 2008, the financial statements of the Company for the year ended December 31, 2007, as well as the management report for fiscal year 2007 were examined and adopted in consultation with the auditor. A further subject of this meeting was the establishment of a subsidiary company, Nanostart Asia Pte Ltd, in Singapore.

In the supervisory board meeting of April 30, 2008, the key topics discussed were business developments during the first quarter of 2008, in particular the progress of product development activities at MagForce Nanotechnologies AG; adoption of a resolution regarding the proposals of management for the agenda of the annual shareholders' meeting; and the personnel situation within the Company.

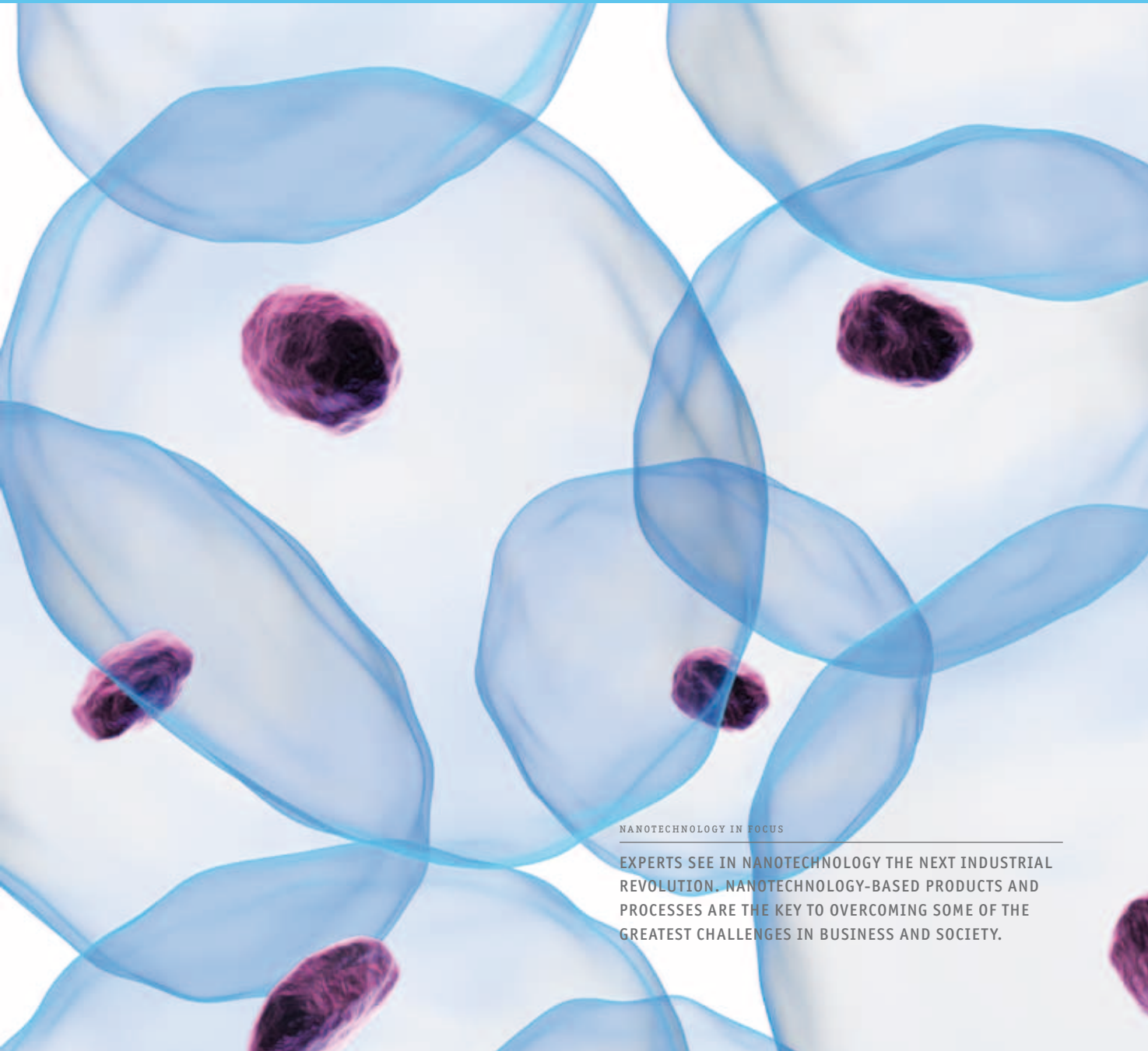
In the supervisory board meeting directly following the 2008 annual shareholders' meeting on July 10, 2008, the subjects primarily discussed, in addition to a review of general business developments during the first half of 2008, were discussion of the preceding annual shareholders' meeting and the presentation of an advisory team for portfolio management.

The primary topic of the supervisory board meeting of December 5, 2008, was a resolution on capital increase and on the deployment of the Company's approved capital. The meeting particularly addressed and examined the necessity, timing, form and amount of the capital increase as well as the required procedure for excluding subscription rights. Further topics of the meeting were the Company's financing situation, particularly against the background of the general crisis in the financial markets.

In the supervisory board meeting of December 11, 2008, key topics were the renewed appointment of Mr. Beckmann as sole executive board member (CEO); reports on the business development during 2008 of the individual companies in the Nanostart investment portfolio; and restructuring and additional financing measures at ItN Nanovation AG. Additional topics discussed included the form and structure of cost reduction measures at the Company in recognition of the fact that it, like all venture capital companies, is affected by the global financial crisis in that the crisis could significantly impede capital raisings or sales of portfolio shareholdings.

#### **Examination and adoption of financial statements**

The financial statements of Nanostart AG presented for the fiscal year 2008 and the management report for fiscal year 2008 have been examined by the auditor chosen at the annual shareholders' meeting, the Mannheim office of Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, and endorsed with its unqualified audit opinion.



NANOTECHNOLOGY IN FOCUS

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EXPERTS SEE IN NANOTECHNOLOGY THE NEXT INDUSTRIAL REVOLUTION. NANOTECHNOLOGY-BASED PRODUCTS AND PROCESSES ARE THE KEY TO OVERCOMING SOME OF THE GREATEST CHALLENGES IN BUSINESS AND SOCIETY.

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In its report, the auditor described the risk management and monitoring system put in place by the executive board and declared it suitable to recognize, at an early stage, any development which might threaten the continued existence of the Company.

The supervisory board has examined the financial statements for the fiscal year ended December 31, 2008, the management report of Nanostart AG, and the proposal for the appropriation of profits, particularly with regard to their conformity with law and regulations and suitability for their intended purpose. As part of this examination, details were discussed with the executive board and, by telephone, with the auditor on the basis of the draft audit report.

In the supervisory board meeting of June 23, 2009, the auditor reported on the results of its examination in its entirety as well as with regard to the issues mandated for special audit attention, providing detailed answers to the questions posed by supervisory board members. The members of the supervisory board reviewed and critically evaluated the audit reports and audit opinions, discussing these, as well as the examinations themselves, with the auditor as to the nature and scope of the exami-

nation as well as the results of the examination. The supervisory board was able to satisfy itself that there were no irregularities in either the examinations or the audit reports. The supervisory board conducted its own thorough examination of the financial statements.

Taking into consideration the auditor reports, the supervisory board then examined the financial statements for the fiscal year ended December 31, 2008, the management report of Nanostart AG, and the proposal for the appropriation of profits and, based on the results of this examination, did not raise any objections. In its resolution of June 29, 2009, the supervisory board approved and adopted the financial statements as prepared by the executive board. The proposal for the appropriation of profits was likewise approved.

#### **Dependent company report**

The external auditor also examined the report prepared by the executive board pursuant to Sec. 312 of the German Stock Corporation Act (*Aktiengesetz*) regarding relations with affiliated companies (the "dependent company report") during fiscal year 2008. The auditor endorsed

this report with the following audit opinion (translated from the original German):

“Having duly examined and evaluated the report, we confirm that:

1. The factual information in the report is correct;
2. The company’s disbursements relating to the legal transactions listed in the report were not inappropriately high; and
3. There were no circumstances related to the measures listed in the report which required an assessment deviating materially from that of the executive board.”

The supervisory board likewise examined the report of the executive board on relations with associated companies along with this audit report. The supervisory board satisfied itself, in particular, that the audit report as well as the examination conducted by the auditor conformed with legal requirements.

The supervisory board particularly examined the dependent company report for its completeness and accuracy and, through this examination, assured itself that the list of affiliated companies was determined with due care

and that necessary precautions had been taken to ensure that all legal transactions and measures subject to reporting requirements were recognized. This examination did not provide any indications which would suggest objections to the dependent company report.

The supervisory board has no objections to the closing statement of the executive board contained in the report or to the results of the auditor’s examination.

In conclusion, the supervisory board wishes to express its gratitude and appreciation to the executive board as well as the entire staff of Nanostart for their commitment and achievements over the past fiscal year.

Frankfurt, Germany, June 29, 2009



Dr. Alfred Krammer  
Chairman of the supervisory board

The image is a composite of two scenes. The upper portion shows a bright sun rising over the horizon of the Earth, with the planet's blue and white atmosphere and clouds visible against the dark space. The lower portion shows a soccer ball, with a smaller soccer ball positioned inside it to provide a sense of scale. The overall color palette is dominated by blues and whites, with the green and brown of the soccer ball's panels providing a contrast.

THE DIMENSION OF NANOTECHNOLOGY:  $10^{-9}$  M

THE RELATIONSHIP IN SIZE BETWEEN  
A NANOPARTICLE AND A SOCCER BALL  
IS COMPARABLE TO THAT BETWEEN A  
SOCCER BALL AND PLANET EARTH.

## NANOTECHNOLOGY – MAKING BIG THINGS FROM THE VERY SMALLEST

Just imagine that you are steering a spaceship through our solar system. Out in front of you, the planet Earth slowly comes into focus, an enormous blue orb in the deep black of space. As you come closer, you see continents beneath the cloud cover – the Americas, large expanses of ocean, then Europe. In total silence, your spaceship races at light speed toward the planet surface.

You recognize the coastline of Europe. With undiminished speed you continue racing closer. You see the British Isles, the French coast, the Alps, then towns and forests. As if zooming with Google Earth, the computer program, you keep racing in closer until you can see the streets and buildings of a city somewhere in Germany. You continue zooming in at blinding light speed until you find yourself in a soccer stadium, where your spaceship abruptly stops just above the playing field. You look down, and there you see it: a soccer ball.

### **Planet Earth – Soccer Ball – Nanometer**

As small as this soccer ball is compared to the vastness of the planet Earth, slowly rotating in space, that's how small one nanometer is compared to a soccer ball. A nanometer is one millionth of a millimeter. It is the size of a human hair which has been split a further 50,000 times. And this is the dimension of nanotechnology.

Nanotechnology is all about the controlled manipulation of materials at the molecular and even the atomic level, and about building tiny structures for specific purposes. For mankind, it represents the gateway to completely new kinds of transformational products and processes – among these, products and processes which hold out the hope of conquering some of the great challenges which a growing world population faces. Nanotechnology can put the right tools in our hands to solve pressing global problems in areas such as energy and environmental technology, medical science and healthcare, transportation and communications.

Some of these solutions, finally now made possible thanks to nanotechnology, may today still sound rather far-fetched – like approaching planet Earth at light speed in a spaceship and stopping just a few meters above a soccer ball.

Just as the same element carbon, depending on the organization of its atoms, can form either the graphite in a pencil or the diamond in an engagement ring, scientists can likewise construct completely new materials with precisely calculated properties from the basic building blocks of our world, atoms and molecules. Nanotechnology is about influencing material properties in desired ways at the level of these tiny building blocks, and that is what makes it both fascinating and revolutionary.

The foundations for nanotechnology were laid with the invention in 1981 of the scanning tunneling microscope (STM), for which Gerd Binnig and Heinrich Rohrer went on to win the Nobel Prize in Physics. This unique technology for imaging surfaces at the atomic level made it possible, for the first time ever, to see these basic building blocks, thus estab-





lishing STM as the essential starting point for manipulating atomic and molecular structures at the nano-level.

### **Nanotechnology today and tomorrow**

Already now, nanotechnology has become an integral part of our everyday lives. Just one look at a current-model car – a ubiquitous product which is at the same time so ordinary and yet so sophisticated – makes this abundantly clear: With nanoparticle-based additives and protective coatings, engine friction and wear are reduced, and fuel economy is improved. On the exterior, nanoparticles in the finish protect against scratches and keep the car bright and shiny. Easy-to-clean surface finishes on auto glass and mirrors repel water and dirt, thus improving visibility, while special non-reflecting coatings make displays more readable even in poor lighting conditions. The inclusion of carbon black nanoparticles in car tires makes them last longer. Electronic components structured at the nanometer level enable on-board computers with ever greater performance, making our cars ever more “intelligent.”

And this transformation of the automobile is far from over: More and more super-light nanomaterials are finding applications in the car, giving parts like bumpers and spoilers more strength and stability for less weight. In the future, we'll see thin-film solar cells on the roofs of cars powered by nano-optimized fuel cells. We'll be able to change the color of car with the press of a button. Your life will become easier as self-repairing finishes fix that scratch which somebody left you in the parking lot, and as your car with its nanotechnology-based intelligence recognizes the traffic situation and communicates with other cars to speed you to your destination.

But the breathtaking possibilities presented by nanotechnology go far beyond the automobile. Even today, the remarkable influence of nanotechnology may be felt throughout industry, and this will only increase. From medicine and pharmaceuticals to automobiles and machinery, from information and communications technology to chemicals and textiles, all the way to resource protection and environmental technology – with its countless practical applications, nanotechnology is enabling entirely new products and product characteristics which just a few years ago could only be dreamt of: Intelligent nanoparticles for drug delivery which seek out pathogens and concentrate powerful medications where they are needed. Windows which automatically darken in the hot summer sun, transform light into electricity and, at the press of a button, show the evening news. Flexible flatscreens with today's newspapers which can be rolled up and put in your pocket. Intelligent clothing which regulates temperature and actively assists with movements. This all sounds like science fiction, but these are all ideas being researched today which – thanks to nanotechnology – may sooner or later become everyday reality.

### **Growing investment**

It should thus come as no surprise that governments throughout the world have also begun to recognize the pivotal role of nanotechnology and to actively support it. In our home country of Germany, the federal government has, as part of its High-Tech Strategy, been steadily increasing its financial commitment to this area from EUR 210 million in 2001 to EUR 430 million in 2009. In Germany alone, some 650 companies ranging from start-up ventures to major corporations are involved in the development, application and marketing of nanotechnology-

based products, putting Germany at the top of all European countries. In 2007, private-sector investments in the three most prominent countries for nanotechnology – the U.S., Japan and Germany – for the first time exceeded nanotech investments by their governments. Of the global total of USD 6.57 billion invested in nanotechnology research and development, almost USD 5 billion has come from major corporations like Intel and IBM in the U.S., Toshiba and Panasonic in Japan, and BASF and Bayer in Germany.

### Engine of economic growth

Just in the automotive industry alone, nanotechnology has, in less than ten years, become a billion-dollar market. This supports the aggressive growth expectations for nanotechnology products over the coming years. According to a forecast from the German Federal Ministry of Education and Research, nanotech-based products could generate annual sales of USD 1 trillion by 2015.

As a comparison, this figure for 2008 was around USD 100 billion. Other forecasts put significantly bigger revenue numbers on the global nanotechnology market. According to U.S. research and strategic consulting firm Lux Research, revenues were some USD 19 billion in 2004, growing by 2007 to USD 147 billion. Lux Research foresees a global market for nanotechnology-based products and applications of USD 3.1 trillion by 2015. Although the scope and magnitudes of these figures differ, the trend is loud and clear: Nanotechnology is at the beginning of a development curve which is big and pointed straight up.

An interesting example of how nanotechnology can revolutionize entire markets is provided by the giant magneto-resistive

(GMR) effect, which was concurrently discovered in 1986 by the German physicist Peter Grünberg and his French colleague Albert Fert. This effect is observed in structures composed of alternating layers of magnetic and non-magnetic material just a few nanometers thick. Since the mid-nineties, the GMR effect has been the industry standard for all read-write heads used in computer disk drives, dramatically increasing their storage capacity.

This is another example of how, in just ten years, nanotechnology has gone from laboratory to industrial application in a pervasive product which is produced in the millions each day. It is a compelling case study of how, in a short period of time, a nanotechnology-based product can achieve 100% penetration of a major global market.

### Nanotechnology is the way of the future

No one doubts anymore that nanotechnology holds out the promise of solving some of the most pressing problems facing our society today. You'll see some examples of these in this annual report. Ever more nanotechnology-based products and processes are being developed which will contribute to personal quality of life and to the well-being of nations. As a venture capital company specialized in nanotechnology, Nanostart is participating in the growing success of these highly promising nanotech products and processes around the globe. Transformational technologies which use nanotechnology to solve the challenges of the future will be accordingly valued by the capital markets. Nanostart is an active participant in this transformation and, through the capital it invests, is helping to realize the extraordinary promise which nanotechnology holds out to us.

## NANOSTART AG— GROWING WITH NANOTECHNOLOGY

Back in the eighties, a student named Michael Dell founded his first computer company with starting capital of just one thousand dollars. Today, Dell Inc. is a global corporation with annual revenues of USD 61 billion which provides employment for 80,000 people. Michael Dell, one of the most successful American entrepreneurs of recent decades, recognized at a very early stage the potential of the personal computer to transform modern society. That was two decades ago; when asked recently what business he would choose if he had to start again today, his answer was: "Nanotechnology." He sees what so many business and financial experts involved in nanotechnology see: an enormous boom which is just beginning.

### **Doing the right thing at the right time**

Leading global investment bank Merrill Lynch has described nanotechnology as the "new industrial revolution," comparing its impact on society and the economy with that of the railroad, the automobile and the computer. Companies with breakthrough technologies offer a two-fold benefit to investors: they have practically no competition, and they offer exceptional growth potential. The objective of Nanostart AG is to benefit from the breakthrough opportunities offered by nanotechnolo-

gy and the growth potential associated with these. Our vision is to turn young, up-and-coming companies into market leaders – companies which have developed nanotechnology-based products or processes which have the potential to transform existing markets from the bottom up. Among the portfolio companies held by Nanostart, we see pioneers which are positioning themselves to do precisely this.

#### **Global investments in innovation-driven industries**

In selecting candidates for investment, Nanostart targets companies with proprietary products or processes which stand to improve the quality of life and to solve pressing future problems of mankind. This investment philosophy has led us to an investment focus on innovation-driven industries such as environmental technology and cleantech; medicine, healthcare and the life sciences; and IT and electronics. From the world's most promising nanotechnology companies, Nanostart then identifies its investment candidates. Nanostart AG presently has investment holdings in ten portfolio companies covering all three of the leading global regions for nanotechnology: Europe, the U.S. and Asia.

#### **Solving problems of industry**

The portfolio companies of Nanostart develop highly innovative products and processes which – once brought to market – help existing industries to solve their problems. The objective of Nanostart is to realize a profit, generally

by selling its portfolio holdings to major industrial corporations at a suitable point in time. By providing access to new sources of capital, IPOs and exchange listings may play a major role in attaining this objective.

Nanostart invests primarily in young companies during phases in which their growth in business – and company valuation – is most rapid. So that it may most effectively share its commercialization and management know-how with its portfolio companies, Nanostart generally aims to serve as lead investor, with the largest ownership share as well as a seat on the board of directors or supervisory board. Our preferred investment range is between one and ten million euros (or equivalent).

#### **Minimizing risks**

Before Nanostart decides to bring a company into its investment portfolio, we conduct a thorough due diligence examination which may take several months. The basic prerequisites for any investment which we make are a technology which is pathbreaking, a target market of sufficient size, and appropriate intellectual property protections. Our final decision, however, puts a heavy weight on the personal character and professional track record of the management team, which must be beyond question.

The tremendous care which Nanostart takes in selecting its portfolio investments is demonstrated by its unrivaled competitive position. In its relatively short company history, Nanostart has already been able to successfully bring five of its portfolio companies to the stock mar-



ket and has sold a sixth holding to a major life sciences corporation.

#### **Successfully commercializing technologies of the future**

Nanostart views each and every one of its portfolio companies as a partner which receives the support it needs to achieve its growth objectives. To Nanostart, the term "investment" means much more than just providing equity capital to a company. As suggested by our motto "Making nanotechnology possible®", Nanostart actively shares its experience in nanotechnology, capital markets, commercialization and the practical aspects of building a business to help its portfolio companies make their ambitious plans possible. One of the key steps generally taken once Nanostart makes an investment is to form a "commercialization team." Where necessary and helpful, Nanostart employees may also take a direct working role in the companies.

Beyond this active supporting role, portfolio companies also benefit from the extensive global network of contacts which Nanostart has established in business and science, in research institutions and government agencies, and with investors and capital market experts. Parti-

cularly in early phases of company development, these contacts with commercialization partners and potential customers can be critical to success.

#### **Networked and respected around the world**

Networking is important, and much of this happens at international nanotechnology conferences and investor events, where Nanostart is an active and highly visible participant. As the organizer of NanoEquity Europe, Nanostart has been instrumental since 2005 in arranging one of the premier annual events to encourage interaction between the nanotechnology and capital markets communities. In 2008, Nanostart together with governmental partners transferred this successful concept to Asia with the hosting of the first NanoEquity Asia conference in Singapore.

#### **Management team with experience and global perspective**

Nanostart AG is headed by CEO Marco Beckmann, widely recognized as one of the world's leading experts on nanotechnology investment. It was the combination of Beckmann's entrepreneurial and investment expertise

and his passion for nanotechnology which led him to originally found Nanostart. In 2001, he published the first book (in German only) on the subject of nanotechnology and the capital markets. As CEO and sole executive board member of Nanostart, Beckmann has been instrumental in building its global investment portfolio, in arranging stock market listings on the Nasdaq Stock Market and the Frankfurt Stock Exchange, and in negotiating the trade sale of a U.S. portfolio holding to a major life sciences corporation.

An essential pillar of the Nanostart success story has been its top-notch investment team which Beckmann has brought together in Germany and, more recently, in Singapore. This team consists of proven experts who, prior to joining Nanostart, worked for many years in major investment firms and financial institutions, where they gained the expertise and experience which they now bring to their work at Nanostart. In Singapore we have managed to build a young local team of investment managers with outstanding backgrounds in science and technology as well as valuable contacts, particularly in the local university community.

Mr. Beckmann is advised and supported by a supervisory board comprised of three highly distinguished figures from the business and scientific communities. Dr. Alfred

Krammer, a prominent German attorney specializing in commercial, company and capital markets law, serves as its chairman. Professor Wolfgang M. Heckl, its deputy chairman, is one of the world's leading scientists in the field of nanotechnology; he is professor of experimental physics at the Ludwig Maximilian University (LMU) in Munich, Germany, and has been director since 2004 of the Deutsches Museum, one of the world's most renowned scientific museums. The third member, Professor Michael Fischer, is director of the Institute of Commercial and Fiscal Law, including Economic Offences Law, at the Christian Albrecht University in Kiel, Germany.

### **Unlimited growth potential**

Nanostart provides investors with the opportunity to participate in the rapid growth of nanotechnology and to invest in a future with transformational economic potential. This story is still in its early chapters, and the scope of application for nanotechnology is still unfolding; where this story takes us remains to be seen, but for the foreseeable future, it is an exciting story indeed.



SINGAPORE AS NANOTECHNOLOGY HUB

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NANOSTART IS WORKING WITH THE GOVERNMENT TO BUILD SINGAPORE INTO THE KEY NANOTECHNOLOGY HUB OF ASIA.

## SINGAPORE – NANOSTART IN THE POLE POSITION

Singapore, the former British colony, has a global importance which transcends its small size, just barely as large as the German port city of Hamburg. It is by far the world's largest port, and it is a global technology leader, with more PCs per 1000 inhabitants than any country except the U.S. For nanotechnology too, Singapore is one of the world's great hot spots. It is for this reason that Nanostart commenced a long-term plan to build up its business activities in Singapore which has now put it now in a uniquely favorable position.

### Government gives clear mandate to Nanostart

In 2008, the Singaporean government availed itself of the business and investment expertise which Nanostart can uniquely bring to the commercialization of nanotechnology-based products and processes and to helping put start-up ventures on the road to becoming major international corporations.

Under this arrangement, Nanostart – as Singapore's only venture capital provider to date specializing in nanotechnology – is working together with the government to strengthen Singapore's position as the leading nanotechnology hub of Asia. As preferred investment partner,

Nanostart will now enjoy direct access to the most promising companies. Building on the country's long success as a high-tech center, university and government research institutions in Singapore are renowned for their nanotechnology advances and for the promise which these hold for commercially successful products and applications. Nanostart, under the new arrangement, will be able to select from a wealth of investment opportunities, such as university spin-offs and young, up-and-coming business ventures.

The low taxes and legal clarity offered by Singapore, as the "Switzerland of Asia," were of particular important to Nanostart in making its commitment, along with its wide use of English as the primary official language. A recent study by KPMG, the international auditing firm, named Singapore as the most cost-effective company location worldwide.

### Government funding for ambitious objectives

According to the National Research Foundation (NRF), a government agency under the direction of the Prime Minister's Office, it is the goal of Singapore to assume a leading role among the world's top technology centers. As part of this overarching goal, Singapore has declared its intention to build itself into the leading Asian center for nanotechnology. Its commitment has been significant, including steady increases in funding for universities, which reached USD 7.5 billion in 2010. In the private sector, the Singaporean government has a major interest in keeping the benefits of intellectual property within





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Singapore through successful in-country business ventures.

Singapore offers a superb research and development infrastructure, but for nanotechnology to put roots into markets and thus into the economy, the country needs more than this; it needs commercialization expertise and venture capital know-how. It is to gain these special skills that the Singaporean government selected Nanostart AG as its investment partner.

#### **Nanostart already reaping benefits from market-oriented research**

Nanostart established its 100%-owned subsidiary Nanostart Asia Pte Ltd in April 2008, the same month in which it made its initial investment in Curiox Biosystems, a spin-off venture of the Singapore's renowned Institute of Bioengineering and Nanotechnology (IBN). Within just a few months of this spin-off and investment by Nanostart, Curiox was already able to produce its first revenues. This exceptionally rapid commercialization success of the first Nanostart portfolio company in Asia attests to the strong market orientation of the research landscape in Singapore.

#### **Venture capital fund in partnership with government**

The investment fund established by Nanostart marks the first venture capital fund in Singapore to invest exclusively in nanotech start-ups. It operates under the

aegis of the NRF's Early Stage Venture Funding Program, which aims to provide substantive support to high-tech companies in early stages of development. Nanostart was selected over numerous other well-known international venture capital funds in a rigorous selection process.

The Singaporean government has invested SGD 10 million (approx. EUR 5.1 million) in the Nanostart fund, powerful evidence of the trust which it has placed in the company. Nanostart has likewise invested a similar amount, providing total initial investment capital of SGD 20 million to the fund. In addition to its direct participation, Nanostart as the fund manager will additionally earn a management fee and success-based profit participation.

#### **Nanostart in key decision-making committee**

But the close cooperation between Nanostart and the Singaporean government extends beyond just this investment fund. In July 2008, Marco Beckmann was appointed to the final selection committee of the country's Technology Enterprise Commercialisation Scheme (TECS). The committee, comprised of prominent government representatives, leading business figures and top scientists, decides which ventures are the most promising, and which of these are to receive government funding.

#### **Top-notch local team**

Nanostart Asia Pte Ltd is headed by Andreas Kröll, who serves as the subsidiary's managing director. He is respon-

sible for investment activities in Singapore, for managing the investment portfolio, and for coordinating exits. With his long years of service managing the U.S. portfolio holdings of Nanostart, as well as his prior professional experience as corporate finance manager at Deutsche Bank, Mr. Kröll has an ideal background to lead the Nanostart Singapore Early Stage Venture Fund I forward.

He is supported in this work by Dr. Lerwen Liu, an expert in nanotechnology with a doctorate in physics. Following 13 years of nanotechnology research experience in Australia, Japan, Italy and the U.S., her professional career has focused since 1999 on coordinating R&D initiatives between governments and industries throughout Asia.

The team is rounded out with two local junior investment managers. Celine Tan previously worked in a nanotechnology start-up in the U.S. following her graduation in chemical and biomolecular engineering from the National University of Singapore. In her new role, she leverages her contacts with former professors, exchanging information with them about current venture and spin-off ideas among nano-scientists in the country's universities.

Sidra Ahmed, the second investment manager, studied at the National University of Singapore where she gathered several years of valuable commercialization experience in the University's Industry Liaison Office.

### **Bringing nanotechnology together with the capital markets**

In order to form closer ties in Singapore between the nanotech community and the international capital markets, Nanostart organized the first NanoEquity Asia in 2008. The conference, which met with great success, was sponsored together with leading government partners, including the Economic Development Board (EDB), the National Research Foundation (NRF), the Standards, Productivity and Innovation Board (SPRING) and the Agency for Science, Technology and Research (A\*STAR). The event provided excellent networking opportunities, and Nanostart was able to significantly extend its own network of contacts throughout Asia.

### **From Singapore to other Asian growth markets**

Singapore is one of the fastest growing economic regions in Asia, with a market of some 3.3 billion people within a flight radius of just a few hours. Through its work with the Singaporean government, Nanostart has carved out a highly visible position for itself as the leading nanotechnology investor in Singapore. But this is only the beginning: From its new base in Singapore, Nanostart aims to build its investment activities into the attractive Asian growth markets which surround it.

## HIGHLIGHTS OF 2008

Nanostart has established a strong and durable local presence in the high-tech center of Singapore, as evidenced by its remarkable initial successes there over the past year. But these were certainly not the only successes of 2008; throughout the year were numerous developments and milestones pointing to continued excellent future growth prospects at Nanostart. Here are just a few of the highlights.

### February

#### Nanostart invests in bionanotechnology company Namos

New process expected to save 50% of precious metal costs for automotive catalytic converters, with savings potential of approx. USD 4 billion

Process involves bionanotechnology-based coating of the ceramic substrate materials used in catalytic converters, forming a network of protein just a few nanometers thick on the surface of the ceramic and ensuring that precious metal does not penetrate inside, thus significantly reducing precious metal costs

### April

#### Nanostart: Further growth with Asian subsidiary

Nanostart establishes Nanostart Asia Pte Ltd in Singapore, ensuring continued leadership in Asian market

Stand-alone investment team to manage Nanostart investment holdings in Asia and pursue new investment opportunities

### May

#### Nanostart AG holds first NanoEquity Asia conference

Leading forum for nanotechnology and capital markets in world-class nanotechnology center of Singapore

Some 50 speakers from governmental organizations, research institutions, the venture capital industry and nanotechnology companies in Australia, China, Germany, Japan, Singapore, UK and USA

Orchestrated by Nanostart and co-organized together with local Singaporean government agencies (A\*STAR, EDB and SPRING), this event offers a forum for a variety of target groups to exchange ideas about nanotechnology and financing

### August

#### Singapore's National Research Foundation invests SGD 10 million in Nanostart Singapore Early Stage Venture Fund I

Fund is part of NRF's Early Stage Venture Funding Scheme, a SGD 60 million program sponsored by the Prime Minister of Singapore

Capital from the fund to be used for investment in nanotechnology-based start-up companies

Investment by the government of Singapore is a milestone in the Nanostart success story, underscoring its ambitious expansion strategy into the highly promising nanotech scene in the southeast Asian technology hub

**August**

## Singapore: Nanostart to advise government

CEO Marco Beckmann appointed to the Final Evaluation Panel of Singapore's Technology Enterprise Commercialisation Scheme (TECS), which awards government funding to Singaporean start-ups and small- to medium-sized high-tech companies

Committee comprised of high-ranking government representatives as well as experts from academia, research and business

High-potential ventures evaluated for funding, with the objective of accelerating their successful commercialization

**October**

## Germany's ERP Start Fund invests in Nanostart-held Namos

Dresden-based company to receive up to one million euros from joint program of the Kreditanstalt für Wiederaufbau (KfW), the German government-owned development bank, and the German Federal Ministry of Economics and Technology

**November**

## Nanostart at NanoEquity Europe 2008

For fourth year, Nanostart serving as co-organizer and sponsor of the NanoEquity Europe conference, the leading forum for nanotechnology and the capital markets

Integrated for first time as a specialized industry forum within the Deutsche Börse German Equity Forum, the largest capital markets event in Europe

13 publicly listed and privately held nanotech companies, including Nanostart AG and its portfolio companies in Germany, to present themselves to investors, analysts and financial service providers

**December**

## 2008: Record year for Nanostart

Net income of EUR 2.1 million is highest since company founding, increase of 40 percent over prior year

## A TALK WITH MARCO BECKMANN, CEO OF NANOSTART AG

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*“Our concept of growing with nanotechnology is working out superbly.”*

*Mr. Beckmann, with the establishment of your Asian subsidiary in Singapore, you’ve significantly expanded your business activities there. You’re even working together with the Singaporean government. How did this come about?*

Singapore is already well along the way to being a knowledge-based society. Its government wants to ensure that the nanotech know-how within the country remains there, and that it is not just bought up by multinationals and shipped off to other countries. Successful local companies create jobs and contribute to overall prosperity, and it is this recognition which drew attention to the need for a partner with expertise in commercialization which can support up-and-coming nanotech companies in turning their ideas into viable products and successful bringing these to market.

It was through our network of contacts that the initial connection was first made. The government has placed its trust in our expertise in nanotechnology and commercialization, and we’re working very closely with it.

*Singapore is located in Southeast Asia. Are the conditions for doing business there every bit as good as in Europe or in the USA? For example, are language barriers an issue? How would you compare the political environment?*

The business environment is in every respect comparable to Europe or the USA. The primary official language is English, which has to do with Singapore's history as a former British crown colony. This is also the reason for the country's reliable legal system, which provides a very favorable environment for business. And of course, the government is an absolutely reliable partner which pursues its objectives with a strong sense of pragmatism.

*Why did you choose Curiox Biosystems as your first investment in Singapore?*

Curiox has developed a technology for analyzing aqueous samples such as blood, urine, lymph or even teardrops for antigens, substances which indicate certain diseases or conditions. Compared to existing technology, it reduces the time required to conduct by a factor of ten, and the amount of material required by a factor of as much as one thousand. In the field of analytic biotechnology, this is – as you can well imagine – nothing short of revolutionary.

These tests are used for medical diagnostics, where they are performed in massive numbers. Thanks to Curiox, these will now get much faster and cheaper. During 2008 a cooperation was established with a partner company in Korea, where the product was then launched at the start of 2009. The company now has its sights on the EU and U.S. markets.

*What's ahead for Nanostart in Singapore?*

Since its beginnings in 2007 until now, the middle of 2009, our business in Singapore has developed enormously. This has a lot to do with the simply fantastic conditions which we're finding there, a good part of which is thanks to the terrific cooperation we're getting from the government authorities. Over the short to medium term, we will now be investing in the most promising nanotechnology ventures, which will be financed through the fund which we have launched together with the government. Over the longer term, it's our aim to use our Singapore office, with its convenient location and good flight connections, as a regional base for the Asian market. We want to benefit not just from the high growth in Singapore but also in the surrounding markets.

*For ItN Nanovation, one of your exchange-listed portfolio companies, the past year seems to have been turbulent at times. How do you assess the situation now?*

ItN Nanovation has a superb technology. Its nanoceramic filters point the way to a new global future for reliable, cost-effective water purification which can be decentrally delivered. Yes, the company had a rough year, not least because of a major order from the Gulf region which was cancelled as a result of the global economic crisis. This was indeed a real blow to a relatively small company like ItN Nanovation, particularly as it had already begun to do advance work. The company had to be restructured, and there were changes in management. It's becoming ever more clear now that the company is once again on track. Right now, I see its situation as highly favorable.





*You've also invested in a new company this year. Are you satisfied with it?*

Absolutely! We're extremely gratified with this new portfolio company, Namos GmbH. Its technology is a proprietary process which enables up to one half of the costly precious metal used in automotive catalytic converter manufacture to be saved. Right now, some 230 metric tons of "new", non-recycled precious metals are being consumed for this. This is a market which is in the billions of dollars. We have invested in Namos together with KfW, the German government development bank. It's a market-ready technology which holds out excellent prospects for sale to a major corporation.

*Following the end of the fiscal year, you wrote down your investment in another of your U.S. portfolio companies, NanoDynamics. What went wrong?*

The collapse of the global financial markets has presented a particular challenge for emerging growth companies. Companies like NanoDynamics which have counted on additional growth capital have faced an extraordinarily tough fight. It was a fight which NanoDynamics was unfortunately not able to win: Its capital requirements were too great, and there was just not enough willingness among investors to put money into the company in the current environment. Our shareholding, however, was just 1.5 percent, so this write-down has practically no impact on our overall business.

*MagForce Nanotechnologies, in which you have a majority shareholding, has been making major steps toward commercialization,*

*with initial market launch expected for glioblastoma. What is this all about?*

Glioblastoma, or as it is medically known "glioblastoma multiforme," is the most common form of malignant brain tumor among adults. It is a devastating diagnosis, with an extremely poor prognosis. Conventional therapy right now consists of surgical resection in combination with post-operative radiation and chemotherapy. But even with this, the tumor quickly grows back, and survival time is often measured in months.

Our portfolio company, MagForce Nanotechnologies, is currently in the final phase of clinical trials for a completely new form of therapy.

*And how does this new therapy work?*

Let me first point out what it doesn't have, which are the unpleasant side effects associated with other forms of cancer therapy, so patient tolerance is much better. The way it works is that a special magnetic fluid is instilled directly into the tumor. Just one milliliter of this fluid contains 17 quadrillion iron oxide nanoparticles. In the next step, the patient lies down in a machine which looks rather like a CAT scanner, and a rapidly alternating magnetic field is applied, causing the magnetic nanoparticles to resonate and warm up. The tumor is heated from the inside out, with the temperature controlled to a fraction of a degree. The heat damages the tumor, or if the temperature is high enough, destroys it.

This intratumoral heating is not painful to the patient, who feels just a mild warming sensation. This can be done as an outpatient procedure, without imposing a burden on quality of life.

*A treatment for cancer without side effects? This sounds exciting indeed. Where does it stand right now in terms of development?*

Regulatory approval, which is as a “medical device,” requires that two clinical studies be completed: a feasibility study and an efficacy study. Right now, MagForce is approaching the end of the required efficacy study, and the last glioblastoma patients are currently being recruited. The application for European regulatory approval should be submitted before the end of 2009. This normally takes about half a year, so this would put regulatory approval in 2010. Thus, after more than twenty years of research and development efforts, EU regulatory approval is now in sight. The vision of MagForce is to establish its Nano-Cancer® therapy as a fourth pillar virtually free of side effects alongside the three existing pillars of cancer treatment – surgery, radiation and chemotherapy.

*What will happen once regulatory approval is received?*

The therapy will then be commercialized. MagForce has established a separate subsidiary to build and service the magnetic applicator machines. The sales model basically follows the “razor blade” principle: The hospitals, clinics and treatment centers which buy these machines will also

have to buy the patented magnetic fluid on an ongoing basis. Furthermore, MagForce is conducting clinical trials on other forms of cancer. Its ultimate aim is to receive regulatory approval of its proprietary therapy for the treatment of all kinds of solid tumors.

*Nanostart has a 77-percent shareholding in MagForce. Once regulatory approval is obtained, will MagForce be an exit candidate?*

The most important part of our business model, of course, is to sell our portfolio companies at a profit. In the case of MagForce, we have a number of different options which could be very lucrative for Nanostart and its shareholders. Until we decide how to best do this, we’re in a very comfortable situation.

*In addition to MagForce, Namos and ItN Nanovation, the fourth Nanostart portfolio company in Germany is Holmenkol AG, in which you’ve been active since 2007. Tell us about this.*

Holmenkol AG is performing extremely well. The company specializes in nanotechnology-based coatings for sports. Wherever you find surfaces in contact with water, snow or ice, whether in competition sports or leisure, you can find a Holmenkol product. These range from winter sports to aquatic and cycling sports, all the way to the protection and care of textiles. It’s a prime example of how a company can use nanotechnology to seize new markets for itself.



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*What's new in your U.S. business activities?*

Other than the write-down which I've already mentioned, our portfolio companies in the U.S. are performing very well. I'd like, in particular, to focus on Lumiphore, in which we have become the leading investor. Cisbio, a world-leading supplier of equipment for drug discovery, has licensed its technology for use in its analysis instruments. A further success is its cooperation agreement with Biophor Diagnostics and the appointment of Dr. David Ecker, a world-renowned expert, to its board of directors. And just a few weeks ago, yet another cooperation agreement was announced with Brahms AG of Germany, which will also use the Lumiphore technology. Brahms develops and produces innovative diagnostic biomarkers which are marketed and sold in more than 65 countries.

Our newest U.S.-based portfolio company, NanoGram, in which we initially invested at the end of 2007, is also performing superbly. There has likewise been a lot of good news over the past year from Nanosys, another of our U.S. investments, which holds several hundred patents in the area of solar energy generation. Since 2009 it's been marketing these through a solar energy subsidiary specially established for this purpose. Another highlight is the cooperation agreement with Life Technologies signed at the beginning of 2009 for a new marking solution to protect products from counterfeiting.

*So Nanostart remains on course for further growth?*

We're working hard to strengthen and expand our leading position. We're growing with nanotechnology - and the pace

of this growth remains brisk indeed. For a long time now, this has been our everyday existence. Nanotechnology can be used to make extraordinarily useful products such as scratch-resistant coatings and sealants, or lightweight materials which are nevertheless extremely strong and stable. And it often enables these to be produced cheaper than conventional products. But beyond these kinds of applications, nanotechnology is also the key to some of the greatest challenges in areas such as medicine and environmental technology, as illustrated by some of the examples I've talked about from our own portfolio companies. It should therefore not come as a total surprise that the market for nanotechnology-based products and processes, already estimated at USD 1 trillion dollars in 2008, is forecast by research and strategic advisory firm Lux Research to reach USD 3.1 trillion by the year 2015.

In the meantime, our own activities are gaining an ever higher profile, fact which is underscored both by the significant growth in media coverage over the past few months and by the growing interest in Nanostart from U.S. investors. This is something we've been finding as we intensify our program of presentations at conferences in the U.S. We've also had some promising initial contacts with the Russian government, which has recently made USD 5 billion in funding available for nanotechnology projects.

*Does this mean that Russia will become the second pillar of your Asian business after Singapore?*

I wouldn't put it in such concrete terms just yet. But it's gratifying to see that the Nanostart concept of growing with nanotechnology is working out superbly.



MARCO BECKMANN

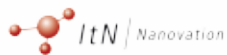
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WE'RE GROWING WITH NANOTECHNOLOGY.  
AND IT'S GROWING AT A RAPID RATE INDEED.





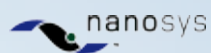
**CURIOX**



**LumiPhore**



**namos**



## AROUND THE WORLD – THE NANOSTART INVESTMENT PORTFOLIO

The nanotech-based companies in the Nanostart portfolio, each of them pioneers in their fields, are working to make their revolutionary products and processes a reality. It is the extraordinary nature of nanotechnology that offers the potential to completely transform markets.

Nanostart AG is the world's only nanotechnology venture capital company with investments in all of the leading nanotech regions: Europe, the U.S. and Asia. The Nanostart investment portfolio currently consists of shareholdings in nine nanotechnology companies.

BIOMICRO SYSTEMS, INC., SALT LAKE CITY, UTAH

BIOMICRO IS A PIONEER AND LEADING PROVIDER IN THE FIELD OF NANO-ANALYSIS TOOLS FOR DNA RESEARCH.



## A SOPHISTICATED LABORATORY SMALL ENOUGH FOR A DOCTOR'S OFFICE



*Using biochips the size of a thumbnail, scientists and researchers can explore nothing less than the “blueprint,” in terms of its molecular biology, of any living organism. These amazing devices, containing thousands of tiny wells arrayed on a glass or plastic substrate, can be used to compare DNA fragments with each other in just a few minutes, and with minimal manual involvement.*

*The results can be used to detect genetic predispositions, thus providing physicians with immediate information to help with diagnosis and initiate medication or therapy which is tailored to the individual patient.*

These biochips, also known as “microarrays,” and the DNA analysis stations of which they are the essential component, have since the end of the 1990s been rapidly replacing the conventional and far more cumbersome past methods for DNA research. BioMicro Systems, founded in 2000, was one of the earliest to recognize the potential of this new method, which thanks to the application of advanced nanotechnology to the active surfaces of the biochips has taken a major technological step forward.





### **Rapid, accurate diagnosis**

More than 1000 of the company's MAUI® portable microarray hybridization systems for DNA analysis are already in active use in corporate laboratories and scientific institutions, including the world-famous Harvard Medical School. The new technology from BioMicro stands out not just for the rapid analysis results which it provides but also for the diagnostic precision which it now makes possible.

Until now, physicians have had to diagnose diseases with unspecific symptoms by testing to exclude disease after disease, at considerable cost in both time and money. In the future, the DNA analysis systems from BioMicro should enable physicians to "read" the likely cause from the patient's DNA, without even leaving the doctor's office. In some cases, this will enable diseases to be treated even before the first symptoms become apparent.

In just a few years, microarray-based testing should become an established routine in many fields in which large-scale analysis capacity is required to examine molecular biological processes. This means that, in addition to its obvious potential for on-the-spot diagnostics, the biochips from BioMicro may find application in virtually any area of biological and life sciences, particularly in pharmaceuticals, biochemistry, biotechnology and microbiology. The range of potential applications is almost limitless. The MAUI® product line is a prime example of how a nanotechnological innovation can permeate many different major fields and industries – with revenue potential to match.

*Basic facts*

**Industries** Life sciences, biotechnology, diagnostics

**Technology** Compact DNA analysis systems based on complementary hybridization which enable many thousands of individual samples in tiny amounts to be automatically analyzed in parallel. Until now, this kind of analysis has only been possible in large research laboratories

**Applications/target industries** Health-care, medical science, pharmaceuticals, biochemistry, genetics and microbiology

**Number of staff** 25

**Patents** 6 (several others currently in process of being filed)

**Company phase** Pre-IPO

**Founded** 2000

**Primary office** Salt Lake City, Utah, USA

*Investment potential*

Pioneer and leading provider in the highly profitable segment of nano-analysis tools which has already reached break-even

BioMicro is a major beneficiary of the migration of DNA testing from centralized laboratories into clinics and doctors' offices

*Recent developments***2009**

More than 1000 of the company's MAUI® analysis systems now sold and in use, including by such prestigious names as Harvard Medical School and pharmaceutical giant Roche

Growth through expansion into other large markets for diagnostics

Expansion of the distribution partnership with Roche/NimbleGen to include an OEM agreement

Positive test results underscore technological superiority of BioMicro

*Management*

Michael Feldman, CEO  
Rob Parry, COO, VP Manufacturing  
Nils Adey, Chief Scientist  
Jessica Barrett, Sales & Marketing

*Transaction details*

**Initial investment** 2004

**Situation** Growth financing

**Ownership stake** Approx. 9 percent

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www.biomicro.com





CURIOX BIOSYSTEMS PTE LTD, SINGAPORE

THE TECHNOLOGY FROM CURIOX SAVES SIGNIFICANT TIME AND MONEY IN DRUG DISCOVERY, THUS CREATING SIGNIFICANT COMPETITIVE ADVANTAGE FOR THE SINGAPORE-BASED COMPANY.

## CURIOX

### A QUANTUM LEAP IN BIOCHEMICAL ANALYSIS

*An antigen is a foreign substance in the body, generally a protein, which stimulates an immune reaction. In order to determine its medical significance, the antigen must first be identified. This is usually done using an enzyme-linked-immunosorbent serologic assay or "ELISA" test, which is an essential step in modern clinical diagnosis. But the ELISA test has many other fields of application.*

*It should thus come as no surprise that ELISA testing in biochemical laboratories has become as routine as measuring temperature in a patient ward. And Curiox Biosystems is revolutionizing the way that this test can deliver results.*

For many years, ELISA testing has been a great blessing in medical science, but it has one big shortcoming: Until now, it has taken about 21 hours to process results after the sample is taken, even in the most acute emergency situations. Furthermore, ELISA testing has until now required samples of a certain minimum size, which is particularly problematic in situations where only a small amount is available or a number of different tests are needed. And because these tests are performed in massive numbers every day, even a cost reduction of just a few cents can add up to an enormous annual savings.



►

**Sample quantity, testing delays and cost are no longer an issue**

With the new technology for efficient testing in tiny wells, called DropArray™, Dr. Namyong Kim, CEO of Curiox Biosystems, has made a quantum leap not only in these improvements to ELISA testing but also in the area of drug discovery. The microtiter plates, with their miniature wells in which sample droplets are deposited for analysis, have been radically improved using nanotechnology. The new DropArray™ technology works on the same principle as conventional microtiter plates for biochemical testing, but with dramatic advances in miniaturization and automation.

What does this mean to users? The amount of sample needed is reduced to as much as one thousandth, and results are available in just two or three hours. And just as important, costs are reduced by some 75%. For physicians and biochemists, for hospitals and pharmaceutical companies, this is like a dream come true.

Curiox is a spin-off of Singapore's renowned Institute of Bioengineering and Nanotechnology (IBN), where Dr. Kim originally developed the technology DropArray™ analysis stations into a marketable product.

Nanostart first became involved as lead investor in Curiox Biosystems at the end of 2007, with the company officially formed in 2008 with investment capital from Nanostart and the Singaporean government. The analysis stations from Curiox are already on the market and being used by such renowned institutions as the Singapore Eye Research

Institute (SERI). Using the new technology from Curiox, clinical researchers there are now able to investigate eye diseases faster, more efficiently and at less cost than was previously possible. Because physicians are able to diagnose eye conditions much faster, treatment can begin sooner. And while earlier, some 40 to 100 microliters of human tear fluid had to be obtained for testing, now just two microliters are sufficient.

Curiox is working closely with SERI to make further advances in its DropArray™ systems, for ophthalmic applications and beyond. In time, the testing station will be compact enough to wheel right into a patient's room.

*Basic facts*

**Industry** Life sciences

**Technology** Platform technology to dramatically reduce the amount of sample and reagent needed for laboratory testing, while simultaneously shortening reaction time

**Applications/target industries**  
Routine biochemical analysis and medical diagnostics

**Number of staff** 7

**Patents** 4

**Company phase** Early stage

**Founded** 2008

**Primary office** Singapore

*Investment potential*

Significant savings in time and cost create decisive competitive advantage for Curiox

Curiox is producing revolutionary analysis stations for medical and life sciences

High market potential for both testing equipment and reagents

*Recent developments*

**2009**

Market breakthrough in Singapore: Renowned Singapore Eye Research Institute now working with DropArray™ analysis station

**2008**

Sales partnership agreement with BioBud Inc. for exclusive distribution of Curiox DropArray™ Rinsing Station in Korea

Exclusive license agreement signed with Singapore's Agency for Science, Technology and Research (A\*STAR) for the various basic and application technologies

The prestigious Harvard Medical School becomes test customer for DropArray™ technology in the North American market

*Management*

Dr. Namyong Kim, CEO

*Transaction details*

**Initial investment** 2007

**Situation** Growth financing

**Ownership stake** 15 percent

*Contact*

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HOLMENKOL AG, HEIMERDINGEN, GERMANY

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WITH ITS NANOTECHNOLOGY-BASED SURFACE SYSTEMS, HOLMENKOL LEADS THE WORLD NOT ONLY IN PRODUCTS FOR WINTER SPORTS BUT ALSO FOR OUTDOOR ACTIVITIES, CYCLING, AND AQUATIC SPORTS.



## USING NANOTECHNOLOGY TO WIN OLYMPIC GOLD

*Kati Wilhelm, Germany's Olympic biathlete with three gold and three silver medals to her name, and Ronny Ackermann, the most successful Nordic combined skier of all time, are just two of the countless champions who have gotten a competitive edge with professional ski wax products from Holmenkol. Some 45 national ski teams from around the world rely on Holmenkol, along with all the major ski manufacturers and ski associations.*

*With its origins as the world's oldest producer of ski wax, Holmenkol AG has since 2002 specialized in the application of nanotechnology-based coatings everywhere in sports and outdoor activities where surfaces come into contact with water, snow or ice.*

In addition to its famed ski waxes, the company's product line, protected with 19 different patents, includes waterproof coatings, detergents, protective coatings and polishes for a wide range of outdoor, cycling and aquatic sports. With the help of nanotechnological innovation, Holmenkol has helped to move forward the boundaries of competitive sports.



### **Nanotechnology for superior performance**

With advanced nanotechnology, surface friction is significantly reduced, letting critical surfaces slide better, and protecting them from their harsh environment. Professional athletes and amateur enthusiasts alike benefit from faster times, more durable materials and improved safety and comfort in the many different disciplines of winter, aquatic and outdoor sports.

In the market for functional sports clothing, the nanotechnology from Holmenkol offers long-lasting properties to repel water and dirt. In addition, its unique coatings can significantly improve resistance to wear and abrasion while letting materials breath.

In the area of boating, Holmenkol develops products which improve the mechanical, aerodynamic and aquady-namic characteristics of pulleys, sails, and hulls. With the nanotech-based coatings from Holmenkol, the slowing effects of mechanical friction can be reduced by almost one half. In addition, the company offers cleaning and care products which provide superior protection for the teakwood surfaces exposed to sun and harsh weather.

The technology from Holmenkol also finds application in fast-drying, highly effective products for waterproofing, in specialized detergents for outdoor and leisure products, in protective coatings which help bicycle frames to repel dirt, in better lubricants for bicycle chains, and in anti-fog coatings for glasses and goggles.

### **From inventor of ski wax to the leading edge of high technology**

Holmenkol is a case in point of how nanotechnology can revolutionize a long-established industry. In 2003, soon after the company's transformation, its Nanowax product segment was crowned by Forbes magazine as the world's number one nanotechnology product of the year, and in the following year, Holmenkol was named one of the 100 most innovative small- to medium-sized companies in Germany.

*Basic facts***Industry** Sports technology**Technology** Development of chemical surface systems and nanotechnologically optimized coatings**Applications/target industries** High-performance ski waxes, anti-friction coatings for aquatic sports, specialized detergents and hygienic products, waterproofing treatments for outdoor activities, cleaning and lubricant products for cycling sports**Number of staff** 28**Patents** 19**Legal form** German stock corporation (AG)**Founded** Brand founded 1922, current company formed 2002**Primary office** Heimerdingen, Germany*Investment potential*

Products with revolutionary characteristics for the growing global sports market

Unrivaled position in global niche market

High growth potential, particularly in winter sports, outdoor and leisure activities, cycling and aquatic sports

*Recent developments***2009**

Revenues up 25 percent compared to prior year

New line of cycling products: Innovative product range now includes BikeWash and Liquid Lubes

Chemical and physical properties brought together in winter sports products for first time

**2008**

100% subsidiary Holmenkol Japan established in Tokyo, with revenues in the millions in first year as well as sales and development agreement with Australian nanotech company Nanovations

Nanogate AG, an international leader in surface coating technology, takes majority shareholding in Holmenkol with the goal of further strategic development for the sports and leisure activities markets

*Management*Christian Römlein, Managing Director  
Thomas Schultheis, Managing Director*Transaction details***Initial investment** 2007**Situation** Growth financing**Ownership stake** 50 percent*Contact***HOLMENKOL AG**Werner-von-Braun-Strasse 3  
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www.holmenkol.com





ITN NANOVATION AG, SAARBRÜCKEN, GERMANY

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FINDING MORE EFFICIENT WAYS TO TREAT AND PURIFY WATER IS A TRULY GLOBAL CHALLENGE. THE NANOCERAMICS FROM ITN NANOVATION STAND TO MAKE A MAJOR CONTRIBUTION TO SOLVING THIS PROBLEM.

## NANOCERAMICS FOR CLEAN WATER AND EFFICIENT ENERGY



*In most developed countries, clean and plentiful water is something we take for granted, something which goes down the drain as quickly as we turn on the tap. But in many parts of the globe, water is, in effect, more valuable than gold because it means the difference between life and death. Right now, some one billion people on this planet suffer from a shortage of fresh water, a number expected to grow to as many as 5.1 billion by the year 2050.*

*Using our water resources more efficiently, as well as finding more cost-effective and reliable ways to treat wastewater and purify drinking water, are challenges of global proportions.*

This is yet another area where nanotechnology can deliver bold new solutions – and where ItN Nanovation AG has developed innovative nanoceramic-based products such as filter systems and coatings. The company makes the special nanoscale powder required for these itself. Ceramic makes an ideal filter material because of its high thermal, chemical and mechanical stability, and with nanoceramics, entirely new possibilities for filtration are opened, such as municipal wastewater treatment and low-cost desalination of seawater to produce clean drinking water. This efficient filtration technology could also be used for many other applications which likewise offer significant market potential, such as the separation of oil from water.



►

### Using nano-filtration to expand the world's water supply

With the unique, patent-protected technology of its CFM Systems® ceramic flat filter membranes, ItN Nanovation can deliver ultra-high filtration rates and unsurpassed purification levels. Depending upon pore size, these can filter contaminants such as bacteria, viruses and mold from water; separate valuable products such as enzymes or antibiotics from solutions; or purify contaminated surface water into clean drinking water.

The company's CFM Systems® ceramic flat filter membranes are truly unique throughout the world. They work so effectively that often only a single filtration pass is enough, saving not only space but also considerable cost. They also stand out for their extremely long operating life. They provide robust, fail-safe filtration which is easy to maintain, thus minimizing operating and servicing expenses. CFM Systems® can also be easily used to upgrade existing water treatment facilities, or to increase operating capacity.

Within the company's home market of Germany, the company has successfully put its mobile filtration units to the test in municipal wastewater treatment systems, as it has its "plug and play" filtration units in the U.S. market.

### Making more efficient use of fossil fuels

Nanoceramic products from ItN Nanovation have also found use in power generation from fossil fuels. The special coating material reduces combustion residues and increases energy efficiency, thus reducing total costs for power generating companies. Major energy corporations such as Germany's RWE, with whom the company has begun a large-scale cooperation program, have expressed enthusiasm for the new technology from ItN.

Another area which holds great promise is the Nanocomp Metcast product line, a nanoceramic coating for metal foundries which withstands exceptionally large temperature fluctuations. The customers of ItN Nanovation in this area already include such global names as Mercedes Benz and BHP Billiton, as well as Friedrich Grohe, a leading German manufacturer of high-quality plumbing fixtures.

*Basic facts*

**Industries** Nanoceramics, high-performance ceramic coatings, ultra-efficient filter systems

**Technology** Production of high-grade ceramic powder, as well as the abrasion-resistant, self-cleaning coatings and filters made from it

**Applications/target industries** Filters for water treatment, ceramic coatings for metal foundries and power plants offering superior operating efficiency and thus total cost savings

**Number of staff** < 80

**Patents** > 150 applied for (of which so far > 70 have been granted)

**Company phase** Exchange listed

**Founded** 2000

**Primary office** Saarbrücken, Germany

*Investment potential*

Successful market introductions and new product launches together with proven and highly capable commercial partners

Technological lead protected by patents

Its high-performance nanoceramic filters and coatings position ItN Nanovation to benefit from two of the great growth markets of the 21st century: water and energy

*Recent developments***2009**

Large-scale showplace project goes into operation time with first-time use of CFM Systems® for municipal water treatment in Germany. Revenues in the hundreds of thousands of euros. German state of Rhineland-Palatinate subsidizes the upgrade based on the high innovative potential of the new technology from ItN Nanovation

**2008**

Five water treatment facilities in Dubai outfitted with CFM Systems® filtration technology to process wastewater into clean drinking water, free of particulates, bacteria and germs, for construction worker camps in the high-growth but arid Gulf nation

*Management*

Lutz Bungeroth, CEO  
Dr. Ralph Nonninger, Director of R&D

*Transaction details*

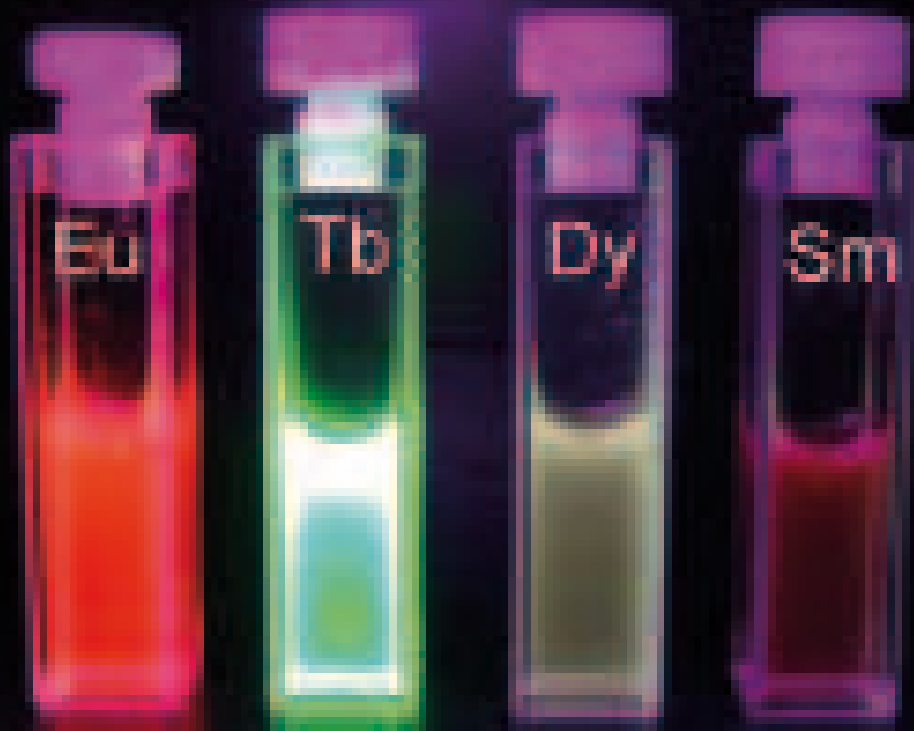
**Initial investment** 2005

**Situation** Growth financing

**Ownership stake** Approx. 27 percent

*Contact*

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LUMIPHORE, INC., RICHMOND, CALIFORNIA

WITH THE NEW KINDS OF QUICK DRUG TESTS  
AND HIGHLY EFFICIENT BIODETECTORS  
ENABLED BY ITS TECHNOLOGY, LUMIPHORE IS  
REVOLUTIONIZING AN ENTIRE FIELD OF THE  
LIFE SCIENCES INDUSTRY.



## AN ILLUMINATING WAY TO DETECT BIOMOLECULES

*Regardless of what specific test procedure a scientist is using to analyze an aqueous biosample, luminescence makes it wonderfully easy to hunt out the biomolecules of interest. To make this happen, special substances are added which form chemical bonds with the molecules of interest, emitting fluorescent light of a particular color to give an unambiguous visual signal.*

*Until now, testing for these kinds of biomolecules has generally been cumbersome and expensive, often involving the use of radioactive markers. This new luminescence-based testing, based on metallic elements called "lanthanides", thus holds great promise. And this is what Lumiphore, founded in 2001 in California's Silicon Valley, is all about.*



### **Inexpensive, highly sensitive, and very illuminating**

The Lumi4™ luminescent lanthanide complexes from Lumiphore represent a breakthrough made possible by nanotechnology. While scientists have known about the fluorescent behavior of lanthanides for a long time, their application to the analysis of biological materials seemed hopeless because of their reactivity with water. Then a research team at the University of California, Berkeley, headed by Kenneth Raymond, who went on to become founder and CEO of Lumiphore, made a critical breakthrough by using a brilliantly simple trick: They put a protective molecular covering around the lanthanides which prevented reaction with water but which enabled light to pass through. Compared to competing methods, this patented detection method emits light several times greater, enabling a level of analytical precision which has until now not been possible. Furthermore, the Lumi4™ lanthanide complexes do not suffer from the “photo-bleaching” effect, meaning that, with the technology from Lumiphore, the same sample can be analyzed a number of times. This makes testing results comparable, regardless of when they are done. As an added benefit, the technology from Lumiphore can be readily integrated into existing laboratory instruments.

### **Precise diagnosis and detection of trace amounts**

One exciting application for these new Lumiphore products is in the area of “immunoassay diagnostics,” in which bodily fluids such as blood, serum or urine are analyzed. Using the innovative drug test which Lumiphore has developed together with partner company BioStride, five different kinds of illegal drugs can now, for the first time, be detected simultaneously. According to figures from the company, the market for drug testing products is currently more than USD 300 million annually – and the trend is clearly headed upward.

In addition, the new technology can be used quite effectively for the diagnosis, prognosis and monitoring of certain diseases. It can also be used to detect the presence of toxic substances in the body, or to monitor medication levels. In the area of microbiology, it can be used to detect pathogens or genetically modified organisms. Even more commercial applications can be found in the detecting environmental contaminants and allergens in food products, and in doping tests for athletes.

*Basic facts***Industry** Life sciences**Technology** Nanodetectors based on fluorescent lanthanide complexes**Applications/target industries** Research and development in the pharmaceutical and biotechnology industries, medical diagnostics, testing for illegal drugs and sports doping, detection of environmental contaminants and genetically modified food products**Number of staff** 8**Patents** n.a.**Company phase** Pre-IPO**Founded** 2001**Primary office** Richmond, California, USA*Investment potential*

Silicon Valley spin-off from UC Berkeley with the potential to revolutionize an entire area of the life science industry. Its patented technology enables new kinds of quick drug tests and highly efficient biodetectors

Major growth potential in the areas of diagnostics, DNA analysis and high-throughput drug discovery

*Recent developments***2009**

Non-exclusive agreement signed with diagnostics leader Brahms AG and its subsidiary Cezanne for the use of Lumi4™ technology in current and future diagnostic tests

**2008**

Dr. David Ecker joins board of directors. Dr. Ecker is CSO and founder of Ibis Biosciences and co-founder of Isis Pharmaceuticals, a U.S. pharmaceutical company with a current market value of approx. USD 1.1 billion

Licensing agreement with Biophor Diagnostics for the use of Lumiphore technology in laboratory-based as well as portable drug testing products

Cisbio, a world-leading supplier of high-throughput screening (HTS) technology for drug discovery, integrates Lumi4™ products into an additional series of its advanced analysis systems

*Management*

Kenneth N. Raymond, CEO

*Transaction details***Initial investment** 2005**Situation** Growth financing**Ownership stake** 20 percent*Contact***Lumiphore, Inc.**  
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MAGFORCE NANOTECHNOLOGIES AG, BERLIN, GERMANY

THROUGH MORE THAN 20 YEARS OF RESEARCH AND DEVELOPMENT WORK, MAGFORCE FOUNDER DR. ANDREAS JORDAN HAS DEVELOPED A CANCER THERAPY BASED ON NANOTECHNOLOGY WHICH IS VIRTUALLY FREE OF SIDE EFFECTS. AN APPLICATION FOR EUROPEAN REGULATORY APPROVAL SHOULD BE SUBMITTED BEFORE THE END OF 2008.

## NANOTECHNOLOGY AS A WEAPON AGAINST CANCER



*According to the World Health Organization, cancer will be the world's number one cause of death in the year 2010. For patients and their families, a diagnosis of cancer is shattering – and often the beginning of a long course of various therapies with unpleasant side effects.*

*From its laboratories in the German capital of Berlin, MagForce Nanotechnologies may now be opening the door to a new era in cancer treatment.*

MagForce is the world's leading company in the area of nanotechnology-based cancer therapy. Following more than 20 years of research and development efforts, the outlook is now bright for a new way to treat cancerous tumors, called Nano-Cancer® therapy, which is virtually free of serious side effects, thus offering cancer patients a better quality of life.

The first phase II clinical trials, the final hurdle to regulatory approval, of this exciting new technology from world-renowned biologist Dr. Andreas Jordan should be completed before the end of 2009.



►

**17 quadrillion iron oxide particles  
in one milliliter of fluid**

The brilliance of the new approach lies in its simplicity: Magnetic nanoparticles made of iron oxide, each with a diameter not exceeding 15 nanometers, are instilled directly into the tumor in a minimally invasive procedure. The nanoparticles are specially covered with an “intelligent” coating of aminosilane.

The cancer cells, which have a particularly high metabolic rate, actively absorb these coated nanoparticles so that they become highly concentrated within the tumor cells and in the interstices between them. The patient is then exposed to a controlled magnetic field.

This external field causes the magnetic particles to oscillate and generate heat from within the tumor, where the temperature can be controlled to a fraction of a degree. The tumor cells can be heated to even as high as 70°C, at which point they die off – without damage to the surrounding healthy tissue. The patient feels only a mild warming sensation, and the treatment procedure can be repeated at daily intervals. Over time, the iron oxide nanoparticles are naturally eliminated by the body.

**The fourth pillar of cancer treatment**

Experts see this “intratumoral thermotherapy” from MagForce as a potential fourth pillar of cancer treatment, alongside surgery, chemotherapy and radiation. In addition to the advantage of its excellent patient tolerance

compared to existing conventional therapies, the new technology can be readily introduced into routine clinical practice. It is efficient, relatively inexpensive, and can in principle be used for all kinds of solid tumors.

**European regulatory approval expected in 2010**

In 2003, MagForce Nanotechnologies AG began its first clinical trials on patients and completed its first feasibility studies. The company has come a very long way since then, with a number of different clinical trials of feasibility and efficacy for different kinds of tumors now in progress. By the end of 2009, MagForce intends to complete its phase II efficacy study on glioblastoma, a particularly aggressive form of brain tumor, clearing the way for European regulatory approval to be granted in 2010. The company is currently also conducting phase II clinical trials on prostate cancer patients as well as other studies to investigate the treatment of residual tumors, esophageal cancer, pancreatic cancer and breast cancer using the new method.

The cancer therapy system from MagForce consists of three product components: NanoTherm® magnetic fluid, containing the iron oxide nanoparticles; the MFH®300F magnetic field applicator machine; and NanoPlan® software for treatment planning.

*Basic facts*

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**Industry** Medical technology

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**Technology** Intratumoral thermotherapy using magnetic nanoparticles

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**Applications/target industries** Hospitals, cancer treatment centers

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**Number of staff** 50

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**Patents** 15 international licensed patent families (for nanoparticles) and 11 other international patent families

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**Company phase** Exchange-listed

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**Founded** 1997

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**Primary office** Berlin, Germany*Investment potential*

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Procedure which stands to revolutionize a highly profitable, multi-billion-dollar market

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Potential to become the “fourth pillar of cancer treatment” alongside surgery, chemotherapy and radiation

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New way to treat tumors with virtually no side effects*Recent developments*

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**2009**

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MagForce fulfills key European ISO standard for the development, manufacturing, final inspection and distribution of products used for its Nano-Cancer® therapy

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**2008**

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ISO certification obtained for manufacture and distribution of NanoTherm® magnetic therapy fluid*Management*

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Dr. Uwe Maschek, CEO  
Dr. Andreas Jordan, founder and CSO*Transaction details*

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**Initial investment** 2004

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**Situation** Growth financing

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**Ownership stake** 77 percent*Contact*

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info@magforce.com  
www.magforce.com



NAMOS GMBH, DRESDEN, GERMANY

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THE TECHNOLOGY FROM NAMOS CAN SAVE UP TO ONE HALF OF THE PRECIOUS METALS NEEDED FOR THE PRODUCTION OF AUTOMOTIVE CATALYTIC CONVERTERS, COSTING BILLIONS OF DOLLARS GLOBALLY EACH YEAR.

## CUTTING THE PLATINUM NEEDED FOR AUTOMOTIVE CATALYTIC CONVERTERS



*5000 years ago, when the ancient Egyptians first began producing jewelry from the rare and beautiful metal platinum, no one could have possibly imagined its primary use today: Some 60% of the world's annual demand for platinum, as well as other precious metals, goes into making automotive catalytic converters.*

*Each year, the global automotive industry spends billions of dollars just for these precious metals. But thanks to a ground-breaking nanobiotechnological innovation from Dresden-based Namos, this could soon change dramatically.*

"Catalytic converters produced using our coating procedure could be on the market starting in 2010," says Dr. Jürgen Hofinger, CEO of Namos GmbH, the newest company to join the Nanostart portfolio. His goal is by then to have his new process, which roughly halves the precious metals required for the manufacture of catalytic converters, ready for large-scale production.



### **More nanotechnology, less precious metal**

The principle is as follows: In automotive catalytic converters, only the precious metal coating on the outer surface is active. However, in order to have a sufficiently large surface area, the ceramic substrate is porous. As the substrate is dipped in the precious metal salt solution, a significant part of the coating solution is absorbed into these pores, where it goes to waste. Now, with its nanobiotechnology-based innovation, Namos is able to block these pores with biomolecules, thus saving the portion of the precious metal deposits which do not come into contact with exhaust gases and thus do not contribute to catalytic performance.

“A further advantage,” added Dr. Hofinger, “is that the process can be readily integrated into existing production processes, so no new production lines need to be built.” In moving into commercialization, the company has approached catalytic converter producers which supply the major automobile manufacturers directly as well as the after-sales market. Negotiations are already moving forward quickly.

*Basic facts***Industry** Cleantech**Technology** Platform technology to develop catalytically active surfaces which deliver the same performance with significantly less precious metal**Applications/target industries** Automotive**Number of staff** 8**Patentfamilien** 5**Company phase** Early stage**Founded** 1998**Primary office** Dresden, Germany*Investment potential*

Breakthrough innovation in production technology for catalytic converters

High revenue potential in the automotive industry, where billions are spent each year on precious metals for catalytic converters

Platform technology with potential applications in other industries

*Recent developments***2009**

Namos wins IQ Innovation Award for Central Germany in Automotive category

**2008**

Germany government ERP Start Fund invests in Namos

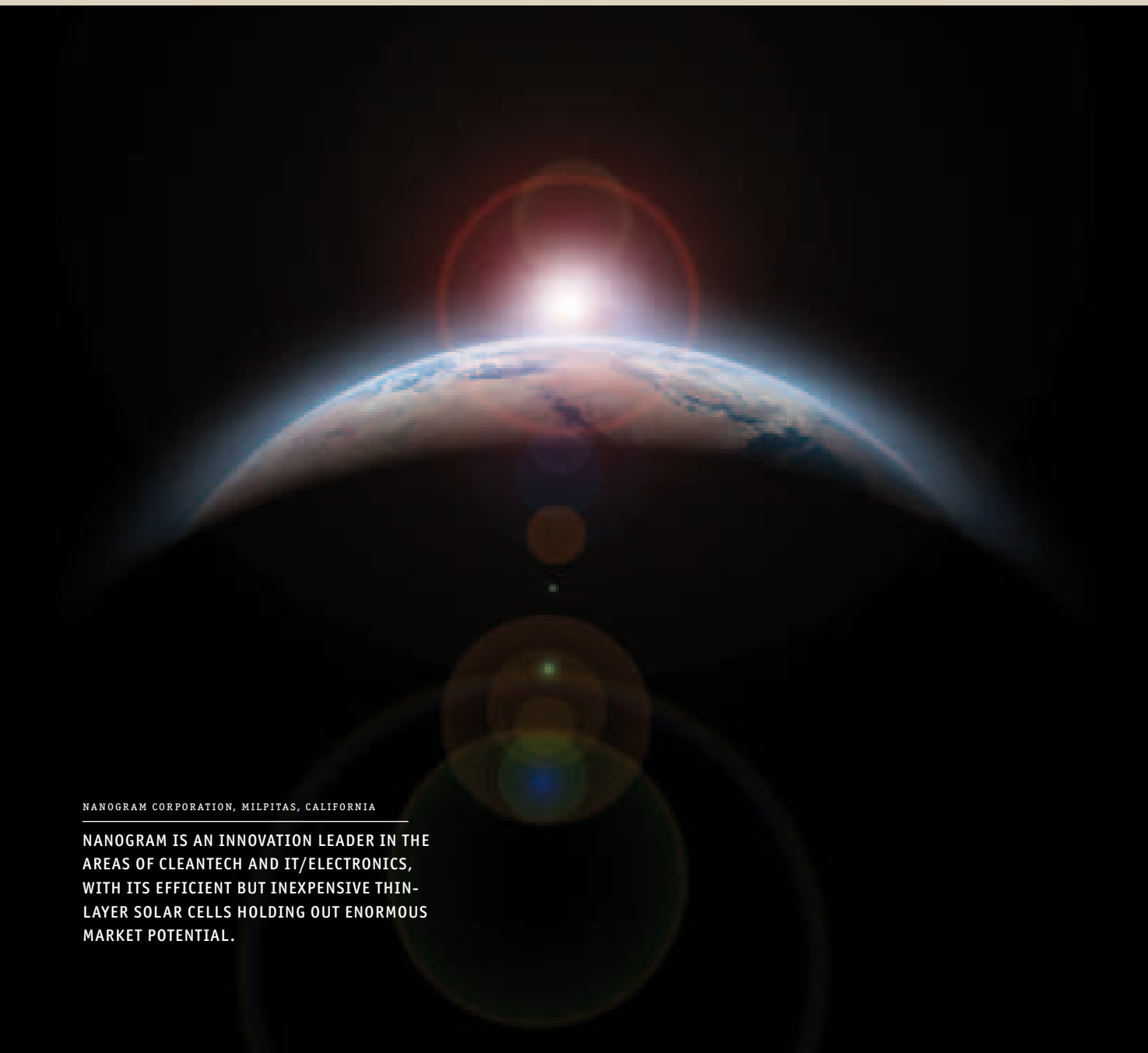
Key milestone achieved: Aging tests passed, demonstrating durability of catalytic converters made with Namos technology

*Management*

Dr. Jürgen Hofinger, CEO

*Transaction details***Initial investment** 2008**Situation** Growth financing**Ownership stake** Approx. 16 percent*Contact***Namos GmbH**Tatzberg 47  
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NANOGRAM CORPORATION, MILPITAS, CALIFORNIA

NANOGRAM IS AN INNOVATION LEADER IN THE AREAS OF CLEANTECH AND IT/ELECTRONICS, WITH ITS EFFICIENT BUT INEXPENSIVE THIN-LAYER SOLAR CELLS HOLDING OUT ENORMOUS MARKET POTENTIAL.

## LOW-COST ENERGY FROM THE SUN WITH NANOTECHNOLOGY-BASED SOLAR CELLS



*As a limitless source of free and decentralized energy, the sun wins hands down over increasingly scarce fossil fuels. Even today, entire nations could, in theory, be powered exclusively with solar energy. The obstacle to this energy breakthrough has until now been the high cost of solar generating panels. This could change very soon, as nanotechnology holds out the key to open the door into a new age of clean solar power.*

*With its uniquely valuable know-how in applying nanotechnology to photovoltaics, NanoGram is a leader in solar power innovation.*

NanoGram has developed a nanotechnology-based process which enables silicon to be processed into solar cells in just a single step. This provides a significant cost advantage over existing production methods, which require a number of individual steps. In addition, the silicon layer is thinner, saving material and money.

►

### Same performance with less silicon

Thanks to its unique technology, NanoGram is able to work with extremely pure silicon, enabling solar cells to produce electricity more efficiently, while also requiring much less raw material than conventional thin-layer solar cells. Despite this savings in material and cost, the solar cells from NanoGram deliver exactly the same efficiency and quality as polycrystalline thick-film solar cells, but at a fraction of the cost. NanoGram is able to pass on this significant cost savings to its customers, where the price-to-generation ratio of the solar cells is the critical issue to the buyer.

### Environmentally friendly electronics

In addition, NanoGram with its platform technology is able to produce electronic ink from silicon nanoparticles which can be used to produce new kinds of printed electronic components. Using this technology, electronic devices such as thin-film transistors can be directly printed on computer circuit boards, or used to produce flexible solar cells which can be rolled out like foil. Other uses for this novel technology include opto-electronic applications, such as display screens and LEDs, or for the production of batteries with greater storage capacity, an innovation which is likewise meeting with significant interest from industry.

### Strong presence also in Asia

Through its subsidiary NanoGram KK in Shinjuku, Tokyo, the company is building a growing presence in the Japanese market, while industrial customers in Korea are served by a branch office in Seoul. NanoGram has also entered into a strategic partnership for development and production with Nagase ChemteX Corp., a subsidiary of Japan's Nagase & Co., Ltd.

*Basic facts*

**Industries** Solar energy, electronics

**Technology** Patented laser technology for the production and coating of nanoparticles

**Applications/target industries** Solar energy, batteries, display technology, printed electronic components

**Number of staff** 64

**Patents** 107 U.S. and international patents, additional 80 U.S. patents pending application

**Company phase** Pre-IPO

**Founded** 1996

**Primary office** Milpitas, California, USA

*Investment potential*

The new technology cuts across the traditional value chain in producing solar cells, enabling highly efficient solar panels to be manufactured at substantially less cost

*Recent developments***2009**

Development partnership with Japanese electronics group Teijin Ltd. to commercialize NanoGram silicon ink for printed electronic applications, such as back panels for flat screens and flexible thin-film photovoltaics

**2008**

Construction of pilot production line for solar cells with award-winning SilFoil™ technology

Company receives Energy Innovator Award from U.S. Department of Energy for its advances in solar power technology

*Management*

Dr. Kieran Drain, CEO  
Robert Drury, CFO  
Dr. Nobuyuki. Kambe, CTO  
Dr. Shiv Chiruvolu, VP R&D

*Transaction details*

**Initial investment** 2007

**Situation** Growth financing

**Ownership stake** 1 percent

*Contact***NanoGram Corporation**

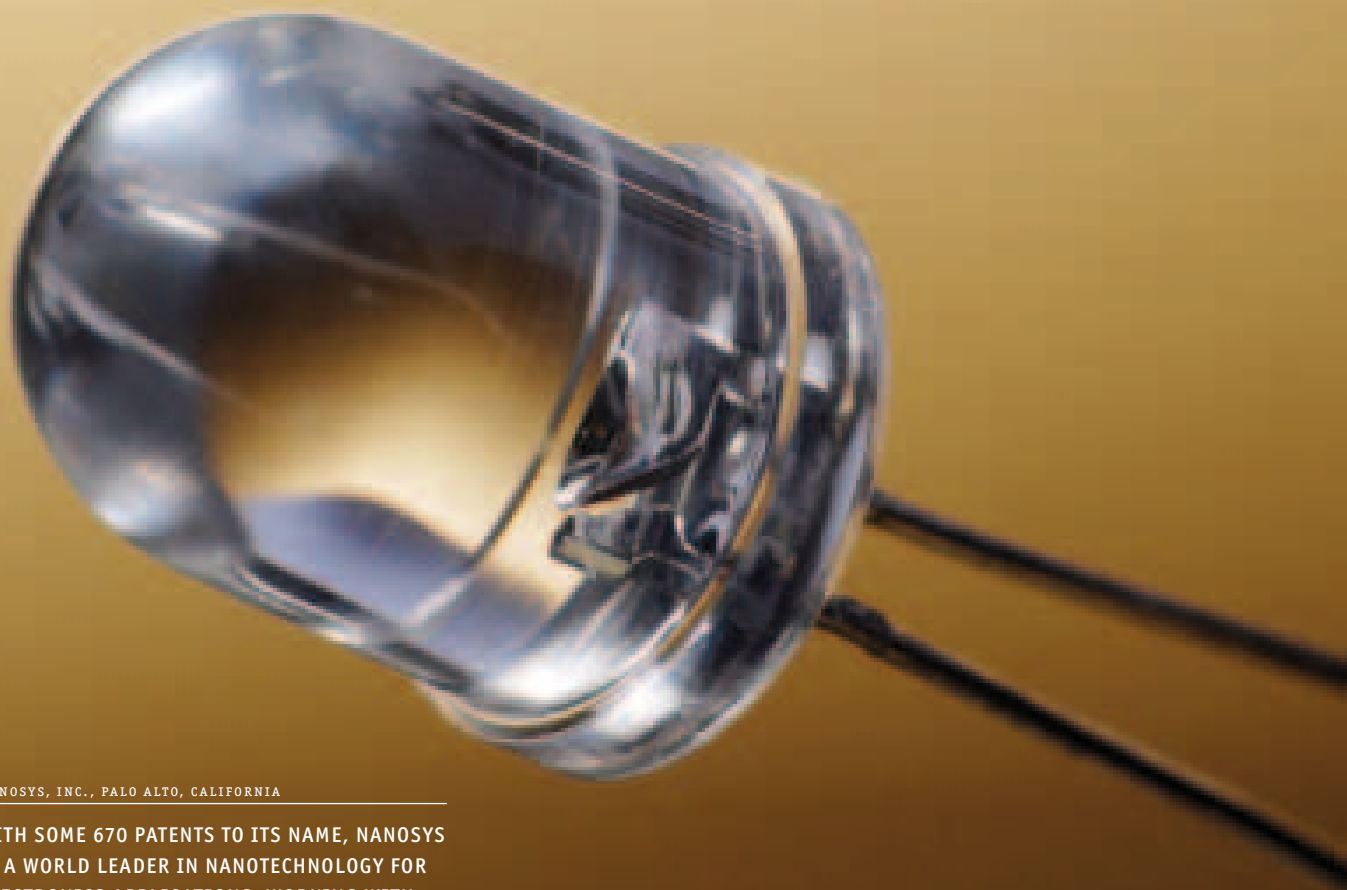
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NANOSYS, INC., PALO ALTO, CALIFORNIA

WITH SOME 670 PATENTS TO ITS NAME, NANOSYS IS A WORLD LEADER IN NANOTECHNOLOGY FOR ELECTRONICS APPLICATIONS, WORKING WITH MAJOR GLOBAL CORPORATIONS SUCH AS SHARP, INTEL AND LIFE TECHNOLOGIES.

## MASTER BUILDER OF NANO-ELECTRONICS



*Customers ranging from major corporations like Sharp and Intel to the U.S. Department of Energy rely on technology from Nanosys. With a portfolio of more than 670 patents, the Silicon Valley company is one of the world's leading "master builders" of electronic nanostructures. Its technology is the basis for countless innovations, such as LEDs which are brighter and more efficient, ever smaller storage systems, compact fuel cells for mobile devices, and flexible circuit boards and solar cells. Nanosys also produces nanometer-sized "quantum dots," a revolutionary breakthrough in the fight against counterfeit products.*

The core of all these products and applications is a patent-protected platform technology which works according to the "building block" principle. Its raw materials are anorganic substances such as silicon, germanium and gallium. By precisely controlling various physical, electronic, optical or chemical parameters, nano-scale structures can be constructed with precise forms, dimensions and characteristics. The platform technology from Nanosys thus opens up limitless possibilities for nanotechnology, allowing materials to be produced with entirely new properties.



►

Together with its partners, Nanosys develops solutions to meet the tailored needs of end customers. To take just one example, it has developed high-performance miniature fuel cells together with Sharp Corporation to power mobile devices, cameras and MP3 players, along with bright, energy-saving displays.

#### **Points of light in the fight against counterfeit goods**

Another of the company's cooperation agreements, for quantum dots, is with Life Technologies, a Nasdaq-listed biotechnology company. Quantum dots are nano-scale crystals which, depending on their dimensions, luminesce in various colors when exposed to UV light. They are cheap to produce but require highly specialized expertise, making them ideal to protect products against counterfeiting, including in life science applications such as pharmaceuticals and diagnostics which are being developed by Life Technologies. According to figures from the United Nations, the annual economic damage from counterfeiting during 2008 was an estimated USD 300 billion just in the pharmaceutical industry alone.

The patented processes from Nanosys are not only helping to drive forward the further miniaturization of electronic components but also to create entirely new solutions. A prime example is in the area of solar cells, where Nanosys is developing new technology together with the U.S. Department of Energy. These flexible, super lightweight solar cells can be applied to virtually any surface, just like a plastic foil. This opens up a whole new world of surfaces for producing solar energy, as well as a new way to generate mobile power from flexible surfaces on bags, backpacks and clothing.

*Basic facts*

**Industries** Life sciences, cleantech, IT/electronics

**Technology** Platform technology to synthesize specialized nanomaterials for flexible, highly efficient electronic components

**Applications/target industries** Storage systems, fuel cell-based power packs, solar cells, optical systems

**Number of staff** 63

**Patents** 670 patents and patent registrations

**Company phase** Pre-IPO

**Founded** 2001

**Primary office** Palo Alto, California, USA

*Investment potential*

Nanosys is regarded in the U.S. market as one of its world leaders in nanotechnology

Uniquely wide-ranging portfolio of over 570 patents, covering virtually an entire field of technology, and enabling the company to provide its commercial partners with "one-stop shopping" for the nanotechnology needed for specific products and applications

Partnerships with major corporations enable superb market penetration while ensuring world-class expertise in manufacturing processes

Extraordinarily broad technology portfolio and know-how offers the potential for products and applications across an extremely wide range of industries, including lucrative markets such as energy, computers and electronics, the defense industry, and life sciences

*Recent developments***2009**

Separate subsidiary QD Soleil established to more effectively bring together and market the company's technology for solar applications

License agreement with biotech company QuantuMDx Group for the application of Nanosys nanowires in biosensors

Coordinated arrangement with Harvard University to license technology for use in biosensors and non-volatile memory

Exchange and combination of licenses for quantum dots agreed with Nasdaq-listed Life Technologies Corp.

License agreement with Vista Therapeutics to use Nanosys nanowires in biosensors

**2008**

License agreement with Evolved Machines for nanotubes and nanowires from Nanosys

Renewal of expanded cooperation agreement with Sharp Corporation in Osaka, Japan

*Management*

Jason Hartlove, President and CEO

*Transaction details*

**Initial investment** 2006

**Situation** Growth financing

**Ownership stake** Approx. 1 percent

*Contact*

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## DEVELOPMENTS DURING THE FISCAL YEAR

### 1. General

As a venture capital provider, Nanostart AG's investment activities aim to achieve a long-term increase in the net asset value per share. To this end, the Company's strategy is to acquire companies with attractive added value potential and calculable risks. The companies targeted operate in the nanotechnology segment. This includes material manufacturers, suppliers and users. Investments are not restricted to any particular region, but have a global focus. In addition, equity investments are acquired in different stages and include start-up companies through to companies undergoing global expansion.

### 2. Situation of the Company and development of its business

#### 2.1 Overall economic environment

Nanostart AG's equity investments, which comprise US and German nanotechnology companies, and since the end of 2007 a Singaporean company, stem from a variety of industries. Consequently, the overall economic development in 2008 affected the business of these individual companies in different ways. The global economy slowed significantly in 2008. Worldwide growth came to 2.5% (prior year: 3.7%) and in Germany it was just 1.3% (prior year: 2.5%). Some sectors such as mechanical engineering

or the automotive industry were particularly hard hit, while the impact on other less cyclical sectors such as medical technology was not as severe.

## 2.2 Capital market environment

The trend on the stock markets in 2008 was dictated by the financial crisis, which later on in the year also spilled over to the overall economy. As a result, the German DAX equity index dropped by around 40% over the course of 2008, from 8,067 points at the beginning of the year to 4,810 points at year-end. The development of the various sectors was extremely varied. Financial stocks were heavily impacted by the financial crisis, while stocks in the small and mid-cap segment in particular also suffered from investor restraint.

## 2.3 Market for venture capital equity investments

In spite of the aforementioned developments, investing activities on the venture capital market in Germany increased year on year. In total, venture capital of some EUR 1.3m (prior year: EUR 1.0m) was invested in 1,107 companies (prior year: 1,006 companies). In the USA, however, a slight decline in investing activities was recorded in the venture capital segment in 2008, with the investment volume falling to USD 28.3b from USD 30.9b in the prior year.

## 2.4 Nanostart AG's development in the fiscal year

In 2007, Nanostart AG acquired three new equity investments: Holmenkol AG, Heimerdingen, and Namos GmbH, Dresden, both located in Germany, and Curiox Pte Ltd headquartered in Singapore. The investment agreements for Holmenkol and Curiox were signed in the prior year.

Namos GmbH has created a process for coating automotive catalytic converters which can reduce the volume of precious metals used in the manufacturing process considerably. Namos GmbH's investors also include the German Development Bank (*Kreditanstalt für Wiederaufbau*, KfW).

Nanostart AG and Nanogate AG each hold a 50% investment in Holmenkol AG, Heimerdingen. The aim of the joint capital contribution is to create growth opportunities in new markets for this established manufacturer of nanotechnologically modified sport and lifestyle products.

The equity investment in Curiox, a life sciences spin-off from the well-known state institute A\*STAR in Singapore, is Nanostart's first equity investment in the city state. Nanostart is the lead investor and the only financial investor among Curiox's shareholders.

MagForce Nanotechnologies AG, Berlin, in which Nanostart AG holds an investment of approximately 77%, is continuing to develop successfully and as planned. The company expects its ongoing clinical studies on glioblastoma patients to be completed in 2009, meaning that the therapy is likely to receive market approval in the first half of 2010. Despite a price decline due to the general negative development on the capital markets, MagForce's share price based on the book value of the equity investment continues to perform very well and currently stands at EUR 30.00. As a result, the hidden reserves item contains around EUR 82m.



By contrast, the share price of ItN Nanovation AG, Saarbrücken, Germany, performed poorly and is currently trading at EUR 1.50. The company's liquidity was secured by new financing rounds within the existing group of investors and by new investors. As a result, the company is currently operating under a going concern assumption. For this reason, and also due to the outstanding business potential of ItN Nanovation AG's products, e.g., in the water filtration segment, Nanostart AG remains confident that the chances of achieving success with its equity investment in this company are promising.

In the fiscal year, the Company established a subsidiary, Nanostart Asia Pte Ltd, in Singapore.

### **3. Presentation of net assets, financial position and results of operations**

#### **3.1 Net assets**

Total assets increased by some EUR 8.9m in the fiscal year. On the asset side, some EUR 6.2m is largely attributable to additions to financial assets resulting from Nanostart AG's new equity investments and additional financing measures for existing equity investments. On the liabilities side, liabilities to banks increased by approx. EUR 4.2m and contributions made to effect the capital increase registered in the new year by around EUR 2.0m.

#### **3.2 Financial position**

Cash inflows in the fiscal year were primarily attributable to the disposal of shares in investees, bank loans and the funds received in December 2008 from the capital

increase registered in the new year. Cash outflows relate in particular to the acquisition of new and additions to existing equity investments as well as the financing of our business activities.

#### **3.3 Results of operations**

In the fiscal year, the majority of Nanostart AG's income was generated by selling shares in affiliates and equity investments. For the most part, expenses relate to other operating expenses (approx. EUR 2.1m) and personnel expenses (approx. EUR 1.1m). The increase in other operating expenses compared with the prior year (2007: around EUR 1.7m) is mainly due to an increase in legal and consulting fees, while the rise in personnel expenses (2007: EUR 0.7m) is the result of increased headcount in connection with the expansion of the Company's business operations. Write-downs of financial assets amounting to around EUR 0.8m, which relate in particular to the write-off of Naturalnano Inc., USA, were also posted in the fiscal year. Overall, Nanostart AG reported net income of some EUR 2.0m for fiscal year 2007 (prior year: approx. EUR 1.5m).

### **4. Risks and opportunities relating to future development**

Nanostart AG's success is largely dependent on the development of the market for venture capital in the nanotechnology segment. There is a risk that increasing competition for financing interesting projects will push up the prices of equity investments and reduce the chance of achieving returns. What is more, a number

of established venture capital providers have a broader equity base and more extensive personnel, technical and other resources. Consequently, competitors may be in a position to react more swiftly to changing market conditions. It cannot be ruled out that new competitors will emerge and alliances formed, thus making them attractive to borrowers. This bears the risk that access to attractive projects may be impeded, which could have a negative effect on the Company's net assets, financial position and results of operations.

Among other things, Nanostart AG's future results of operations depend on the acquisition of new, innovative companies with strong growth prospects. There is no guarantee that such companies will always be looking to raise capital on the market or that Nanostart AG will always have access to such companies. Despite careful selection, it cannot be ruled out that Nanostart AG's equity investments entail an above-average risk and the development of the Company's equity investments will not be in line with expectations. This can exert considerable influence on these equity investments' earnings power and returns, and thus on Nanostart AG.

The nature of providing venture capital means that income is irregular. More often than not, the Company only realizes income when an equity investment is sold. The sale of an equity investment and the accompanying realization of a profit/loss depend on a number of external factors over which the Company has no influence. The Company strives to time its transactions so as to obtain the best possible price, which may lead to discontinuity in the transactions. The Company may also require finan-

cing if equity investments cannot be sold at a profit.

All of these developments and Nanostart AG's ability to raise additional capital are extremely dependent on the situation on the capital market and the economy as a whole. The situation has been strained during the financial crisis and the general economic slowdown, which began in 2008. If the situation continues, this could heighten the risks outlined above. Measured in terms of book values, the equity investments in ItN Nanovation AG and MagForce Nanotechnologies AG currently account for a substantial portion of Nanostart AG's fixed assets. Consequently, negative developments at both of these companies could have a significant effect on the Company's financial position, net assets and results of operations. In addition to the development of ItN Nanovation's business performance and share price, it is crucial that the new financing rounds provide a basis for successful restructuring.

To minimize the aforementioned risks, Nanostart AG is implementing a range of measures. These include, for example, continuous analysis of the nanotechnology market, monitoring the competition on an ongoing basis, permanent investment controlling and constant dialog with the management teams of the equity investments.

This combination of measures helps to minimize Nanostart AG's specific risks. The Company's opportunities lie in particular in using its market position to continue to systematically expand the investment portfolio, thus further consolidating its position as the leading nanotechnology investment company. In addition, the



▶  
Company's large stake in MagForce Nanotechnologies AG greatly increases its potential to benefit from this investee's development.

**5. Disclosures on financial instruments pursuant to Sec. 289 (2) of the German Commercial Code (*Handelsgesetzbuch*, HGB)**

As regards its financial instruments, which mostly related to cash and cash equivalents, receivables and other assets as well as liabilities in fiscal year 2006, the Company is exposed in particular to the following risks:

The default risk from financial assets comprises the danger that a contractual partner may default and is therefore limited by the positive fair values of the receivables from the respective counterparty. No valuation allowances were required as of the balance sheet date.

**6. Closing statement on the dependent company report**

In accordance with Sec. 312 of the German Stock Corporation Act (*Aktiengesetz*), the executive board prepared a report on relationships with affiliates for the reporting period which was reviewed by our auditors. The dependent company report ended with the following declaration:

"Our Company received appropriate consideration for the legal transactions and measures explained in the report and, as a result, was not disadvantaged by any measures implemented or not implemented. This assessment is

based on the circumstances known to the executive board at the time of the transactions subject to mandatory reporting."

**7. Outlook for 2009 – anticipated development**

The radical change which began in recent years affecting nanotechnology in laboratories through to the use of nanotechnological products will continue in 2009. This will be accompanied by further rapid growth in the economic significance of nanotechnology.

By contrast, the overall economic environment and the situation on the capital markets pose challenges for companies in the venture capital segment. These can include, for example, acquiring new customers, business partners or investors, which is becoming increasingly difficult in the present climate. This makes it difficult for the Company to make accurate forecasts and plan the development of its business.

Based on its current investment portfolio and its significance as an important financial investor in nanotechnology gained over the last, extremely successful fiscal years, Nanostart AG believes that it is well equipped to continue to benefit from the growth trend of nanotechnology and to close forthcoming fiscal years with good results as well.

#### 8. Significant events since the close of the fiscal year

In December 2008, a capital increase of around EUR 2m was effected and entered in the commercial register in the new year. In April 2009, Nanostart Singapore Early Stage Venture Fund I, the first venture capital fund under the management of Nanostart AG, closed its first financing round. With the Singaporean government as a major investor, Nanostart will initially invest SGD 20m (around EUR 10m) in Singapore-based nanotechnology companies via this fund. In June 2009, Nanostart AG granted a loan of approximately EUR 2.1m to MagForce Nanotechnologies AG for the further financing of this company.

Frankfurt, Germany, June 26, 2009

A handwritten signature in black ink, appearing to read 'M. Beckmann', written in a cursive style.

Marco Beckmann  
Chief executive officer

## BALANCE SHEET

## Assets

		31 Dec. 2007	
		EUR	EUR k
<b>A</b>	<b>Fixed assets</b>		
I	Intangible assets		
	Franchises, industrial and similar rights and assets, and licenses in such rights and assets	485.00	3
II	Property, plant and equipment		
1	Other equipment, furniture and fixtures	156,749.00	126
2	Payments on account	0.00	3
		<b>156,749.00</b>	<b>129</b>
III	Financial assets		
1	Shares in affiliates	6,456,232.17	6,731
2	Loans to affiliate	5,267,920.00	2,268
3	Equity investments	14,084,202.18	10,597
4	Loans to other investees and investors	0.00	17
		<b>25,808,354.35</b>	<b>19,613</b>
		<b>25,965,588.35</b>	<b>19,745</b>
<b>B</b>	<b>Current assets</b>		
I	Receivables and other assets		
1	Trade receivables	1,194.27	4
2	Receivables from affiliates	3,084,507.18	2,441
3	Other assets	41,194.77	46
		<b>3,126,896.22</b>	<b>2,491</b>
II	Cash on hand, Bundesbank balances, bank balances and checks	2,117,651.83	95
		<b>5,244,548.05</b>	<b>2,586</b>
<b>C</b>	<b>Prepaid expenses</b>	<b>26,527.37</b>	<b>13</b>
		<b>31,236,663.77</b>	<b>22,344</b>

## Equity and liabilities

		EUR	EUR	31 Dec. 2007 EUR k
<b>A</b>	<b>Equity</b>			
I	Subscribed capital	5,250,000.00		5,250
	Conditional capital: EUR 2,250,000.00			
II	Capital reserves	9,900,000.00		9,900
III	Revenue reserves	4,614,681.28		3,186
IV	Net retained profit	2,073,956.02		1,429
			<b>21,838,637.30</b>	<b>19,765</b>
<b>B</b>	<b>Contributions made to effect the resolved capital increase</b>		<b>2,026,800.00</b>	<b>0</b>
<b>C</b>	<b>Provisions</b>			
	Other provisions		<b>184,033.59</b>	<b>135</b>
<b>D</b>	<b>Liabilities</b>			
1	Liabilities to banks	6,413,031.77		2,246
2	Trade payables	61,836.47		151
3	Liabilities to affiliates	654,931.81		1
4	Other liabilities	57,392.83		46
	thereof for taxes: EUR 46,215.44 (prior year EUR 29k)			
	thereof for social security: EUR 2,160.00 (prior year EUR 0k)			
			<b>7,187,192.88</b>	<b>2,444</b>
			<b>31,236,663.77</b>	<b>22,344</b>



## STATEMENT OF CHANGES IN FIXED ASSETS

		Acquisition/production cost			
		1 Jan. 2008	Additions	Disposals	31 Dec. 2008
		EUR	EUR	EUR	EUR
<b>I</b>	<b>Intangible assets</b>				
	Franchises, industrial and similar rights and assets, and licenses in such rights and assets	17,318.01	0.00	0.00	17,318.01
<b>II</b>	<b>Property, plant and equipment</b>				
1	Other equipment, furniture and fixtures	196,633.41	62,708.87	8,061.25	251,281.03
2	Payments on account	2,727.48	0.00	2,727.48	0.00
		<b>199,360.89</b>	<b>62,708.87</b>	<b>10,788.73</b>	<b>251,281.03</b>
<b>III</b>	<b>Financial assets</b>				
1	Shares in affiliates	6,730,947.17	0.00	274,715.00	6,456,232.17
2	Loans to affiliates	2,267,920.00	3,000,000.00	0.00	5,267,920.00
3	Equity investments	11,066,140.07	4,254,004.90	7,201.00	15,312,943.97
4	Loans to other investees and investors	49,609.48	0.00	49,609.48	0.00
		<b>20,114,616.72</b>	<b>7,254,004.90</b>	<b>331,525.48</b>	<b>27,037,096.14</b>
		<b>20,331,295.62</b>	<b>7,316,713.77</b>	<b>342,314.21</b>	<b>27,305,695.18</b>

Amortization, depreciation, and write-downs				Net book values	
1 Jan. 2008 EUR	Additions EUR	Disposals EUR	31 Dec. 2008 EUR	31 Dec. 2008 EUR	31 Dec. 2007 EUR
14,546.01	2,287.00	0.00	16,833.01	485.00	2,772.00
70,067.41	30,711.87	6,247.25	94,532.03	156,749.00	126,566.00
0.00	0.00	0.00	0.00	0.00	2,727.48
<b>70,067.41</b>	<b>30,711.87</b>	<b>6,247.25</b>	<b>94,532.03</b>	<b>156,749.00</b>	<b>129,293.48</b>
0.00	0.00	0.00	0.00	6,456,232.17	6,730,947.17
0.00	0.00	0.00	0.00	5,267,920.00	2,267,920.00
468,809.36	759,932.43	0.00	1,228,741.79	14,084,202.18	10,597,330.71
32,480.56	0.00	32,480.56	0.00	0.00	17,128.92
<b>501,289.92</b>	<b>759,932.43</b>	<b>32,480.56</b>	<b>1,228,741.79</b>	<b>25,808,354.35</b>	<b>19,613,326.80</b>
<b>585,903.34</b>	<b>792,931.30</b>	<b>38,727.81</b>	<b>1,340,106.83</b>	<b>25,965,588.35</b>	<b>19,745,392.28</b>

## INCOME STATEMENT

	EUR	2008 EUR	2007 EUR k
1 Revenue	55,929.64		361
2 Other operating income	5,960,600.27		3,899
		<b>6,016,529.91</b>	<b>4,260</b>
3 Cost of materials			
Cost of purchased services	124,733.39		191
4 Personnel expenses			
a Wages and salaries	976,358.41		620
b Social security, pension and other benefit costs	107,707.83		73
5 Amortization, depreciation and write-downs of intangible assets and property, plant and equipment	32,998.87		30
6 Other operating expenses	1,932,217.96		1,664
		<b>3,174,016.46</b>	<b>2,578</b>
7 Other interest and similar income thereof from affiliates: EUR 484,268.52 (prior year EUR 287k)	486,001.91		343
8 Write-downs of financial assets	759,932.43		501
9 Interest and similar expenses thereof to affiliates: EUR 12,611.10 (prior year EUR 18k)	493,799.14		97
		<b>-767,729.66</b>	<b>-255</b>
10 Result from ordinary activities		2,074,783.79	1,427
11 Income taxes	56.77		0
12 Other taxes	771.00		-2
		<b>827.77</b>	<b>-2</b>
13 Net income for the year		2,073,956.02	1,429
14 Profit carryforward		1,428,502.83	1,457
15 Transfer to revenue reserves		-1,428,502.83	-1,457
<b>16 Net retained profit</b>		<b>2,073,956.02</b>	<b>1,429</b>



## NOTES TO THE FINANCIAL STATEMENTS

### General

These financial statements, presented here in translation from the German original, have been prepared in accordance with the provisions of the German Commercial Code (*Handelsgesetz*, HGB) and the German Stock Corporation Act (*Aktiengesetz*, AktG).

The Company is a small corporation as defined by Sec. 267 HGB. The Company made partial use of the size-related simplification options for small corporations.

The income statement has been prepared using the cost-summary method.

### Accounting and valuation methods

Acquired intangible assets are recognized at acquisition cost and amortized over their expected useful lives.

Property, plant and equipment are recognized at acquisition or production cost and, if they have a limited life, are depreciated using the straight-line method over a period of between three to 13 years.

As of January 1, 2008, low-value assets with a value not exceeding EUR 150.00 are fully expensed in the year of acquisition. Additions with an acquisition cost of between EUR 150.00 and EUR 1,000.00 are recognized in a collective item and released in equal amounts over a period of five years.

Financial assets are recognized at the lower of cost or net realizable value.

Securities are valued at the lower of cost or net realizable value.

Receivables and other assets are recognized at an amount which takes account of all identifiable credit risks.

Other provisions take all risks into account which are identifiable based on prudent business judgment. Liabilities are recognized at the amount repayable.

## NOTES AND EXPLANATIONS TO THE BALANCE SHEET ITEMS

### Fixed assets

The development of fixed assets is presented in the statement of changes in fixed assets. Impairment losses of EUR 760k were charged during the fiscal year.

### Information on shareholdings

	Equity interest (%)	Equity EUR k	Net income/ net loss EUR k	Year
MagForce Nanotechnologies AG, Berlin, Germany	77.0 *	-1,268	-4,197	2008
ItN Nanovation AG, Saarbrücken, Germany	20.6 **	2,650	-8,209	2007
Venture Tech Equity Partners GmbH, Frankfurt am Main, Germany	100.0	1,092	-243	2007
Holmenkol AG, Ditzingen-Heimerdingen, Germany	50.0 ***	2,547	-267	2007 / 2008
Nanostart Asia Pte Ltd, Singapore	100.0	****	-	-

\* of which 0.2% held indirectly via VentureTech Equity Partners GmbH

\*\* of which 6.1% held indirectly via VentureTech Equity Partners GmbH

\*\*\* minus 1 share

\*\*\*\* The company was established in April 2008 with equity of SGD 1. The financial statements are not yet available.



MagForce Nanotechnologies AG, Berlin, Germany, was issued a letter of subordination totaling EUR 5,268k for loans granted by Nanostart AG.

#### Receivables and other assets

Receivables and other assets are due in up to one year except for the receivables from Venture Tech Equity Partners GmbH, Frankfurt, of EUR 2,206k and MagForce Nanotechnologies AG, Berlin, of EUR 642k disclosed under receivables from affiliates, for which subordination agreements have been signed.

#### Equity

As of the balance sheet date, the Company's capital stock entered in the commercial register amounted to EUR 5,250,000.00.

Nanostart AG's capital stock is thus divided into 5,250,000 no-par value bearer shares. The Company also has authorized capital of EUR 1,750,000.00.

In accordance with a resolution by the executive board and supervisory board from 4 December 2008, the Company's capital stock was increased by EUR 360,000.00 from EUR 5,250,000.00 by issuing 360,000 new no-par value bearer shares with a nominal value of EUR 360,000.00. The capital increase was entered in the commercial register on 26 January 2009. As a result, the capital increase is disclosed in a special item after equity as of the balance sheet date.

In accordance with a resolution approved at the shareholder meeting, the prior-year net retained profit of EUR 1,428,502.83 was transferred in full to the revenue reserves.

Revenue reserves thus developed as follows:

	EUR
As of 31 December 2007	3,186,178.45
Transfer as resolved by the shareholder meeting	1,428,502.83
<b>As of 31 December 2008</b>	<b>4,614,681.28</b>

#### Provisions

Other provisions primarily relate to accrued vacation, audit fees, supervisory board remuneration and outstanding invoices.

**Liabilities**

	31 Dec. 2008		31 Dec. 2007	
	Total EUR k	Due in up to 1 year EUR k	Total EUR k	Due in up to 1 year EUR k
<b>Liabilities</b>				
to banks	6,413	6,413	2,246	2,246
Trade payables	62	62	151	151
to affiliates	655	655	1	1
<b>Other liabilities</b>				
thereof for taxes: EUR 46k (prior year: EUR 29k)	57	57	47	47
thereof for social security: EUR 2k (prior year: EUR 0k)				
	<b>7,187</b>	<b>7,187</b>	<b>2,445</b>	<b>2,445</b>

**Other financial obligations**

	EUR k	Maturity
<b>Obligations</b>		
from rental agreements	116 / 34	2009 / 2010
from lease agreements	19	2009
from investment agreements	826	2009
from loan agreements	4,816 / 1,480	2009 / 2010



## NOTES AND EXPLANATIONS TO THE INCOME STATEMENT ITEMS

### Other operating incom

Other operating income mainly comprises gains from financial assets.

### Other operating expenses

For the most part, other operating expenses relate to advertising and travel expenses, premises expenses and legal and consulting fees.

### Other notes

#### Corporate bodies

The sole member of the company's executive board (chief executive officer) during the fiscal year was:

**Mr. Marco Beckmann**

The members of the supervisory board during the fiscal year were:

**Dr. Alfred Krammer**

Lawyer, Munich, Germany (chairman)

### **Prof. Wolfgang M. Heckl**

Professor of experimental physics at Ludwig Maximilians University Munich, Germany (deputy chairman)

### **Prof. Michael Fischer**

Professor at the Institute for Commercial and Tax Law at the University of Kiel, Germany

### Proposal for the appropriation of profits

The executive board and supervisory board propose to the shareholder meeting to transfer the net retained profit of EUR 2,073,956.02 in full to the revenue reserves.

Frankfurt, Germany, June 26, 2009



Marco Beckmann  
Chief executive officer

### Audit opinion

We have audited the annual financial statements, comprising the balance sheet, the income statement and the notes to the financial statements, together with the bookkeeping system, and the management report of Nanostart AG, Frankfurt am Main, Germany, for the fiscal year from January 1, 2008 to December 31, 2008. The maintenance of the books and records and the preparation of the annual financial statements and management report in accordance with German commercial law are the responsibility of the Company's management. Our responsibility is to express an opinion on the annual financial statements, together with the bookkeeping system, and the management report based on our audit.

We conducted our audit of the annual financial statements in accordance with Sec. 317 of the German Commercial Code (*Handelsgesetzbuch*, HGB) and German generally accepted standards for the audit of financial statements promulgated by the Institute of Public Auditors in Germany (*Institut der Wirtschaftsprüfer*, IDW).

Those standards require that we plan and perform the audit such that misstatements materially affecting the presentation of the net assets, financial position and results of operations in the annual financial statements in accordance with German principles of proper accounting and in the management report are detected with reasonable assurance. Knowledge of the business activities and the economic and legal environment of the Company and expectations as to possible misstatements are taken into account in the determination of audit procedures. The effectiveness of the accounting-related internal control system and the evidence

supporting the disclosures in the books and records, the annual financial statements and the management report are examined primarily on a test basis within the framework of the audit. The audit includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the annual financial statements and management report. We believe that our audit provides a reasonable basis for our opinion.

### Our audit has not led to any reservations.

In our opinion, based on the findings of our audit, the annual financial statements comply with the legal requirements and give a true and fair view of the net assets, financial position and results of operations of the Company in accordance with [German] principles of proper accounting. The management report is consistent with the annual financial statements and as a whole provides a suitable view of the Company's position and suitably presents the opportunities and risks relating to future development.

Mannheim, Germany, June 26, 2009

Ernst & Young GmbH  
Wirtschaftsprüfungsgesellschaft

Matner	Rebscher
Wirtschaftsprüfer	Wirtschaftsprüfer

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This English translation of the original German annual report (*Geschäftsbericht*), and in particular the financial statements (*Jahresabschluss*), both of which are also made available in their original form, is provided solely for the convenience of the reader. While every effort has been made to ensure the quality of the translation, Nanostart AG assumes no liability for deviations from the German original.



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