



**Arthur Higgins,**  
Chairman of the  
Executive Committee  
of Bayer HealthCare

*As a leading, innovative health care company, Bayer HealthCare is committed to researching unmet medical need in the areas of oncology, hematology and cardiology. Improving health goes hand in hand with being a responsible corporate citizen, and we aim to work with both governmental and non-governmental organizations to address major health problems.*

## Bayer HealthCare

As a research-intensive company, Bayer HealthCare (BHC) invested approximately €2 billion in the development of new active substances, drug products and diagnostic systems in the 2004/2005 reporting period. BHC's research is concentrated on the treatment of cancer and cardiovascular diseases. BHC's highest-selling products include Ascensia®, an umbrella brand for blood glucose measurement systems and services; Kogenate®, a recombinant blood coagulation Factor VIII product; Adalat®, an antihypertensive drug; Aspirin®, an analgesic; and Ciprobay®/Cipro®, an antibiotic used to treat infectious diseases.

### Research into rare diseases as well

Bayer HealthCare's activities are not concentrated solely on the development of drug products to treat widespread diseases with correspondingly large sales potential. The Bayer subgroup also develops therapies for diseases that only affect a small number of people. One example in this context is the treatment of advanced renal and hepatic cell carcinoma with the new anticancer drug Nexavar®. The European Union (E.U.) and the U.S. Food and Drug Administration (FDA) granted orphan drug status for this substance in the treatment of metastasizing renal cell carcinoma in 2004 and hepatic cell carcinoma in 2006. Orphan drug status is awarded to substances that are being developed for the treatment of rare diseases. This status also grants the drug manufacturer exclusive marketing rights for a defined period of time (seven years in the United States and ten years in the E.U.), provided that the company complies with certain requirements (see also page 28).

Likewise in 2004, Bayer HealthCare was granted orphan drug status by the European Commission for acetylsalicylic acid in the treatment of polycythemia vera, an extremely rare disease in which blood cells multiply in an uncontrolled fashion. The Commission's decision to grant this status is confirmation that supplementary treatment with acetylsalicylic acid (ASA), the active ingredient of Aspirin®, considerably reduces the risk of the patient suffering myocardial infarction or stroke. Patients suffering from polycythemia vera are particularly susceptible to circulation disorders and vascular occlusion, with consequences ranging up to premature myocardial infarction or stroke. Acetylsalicylic acid inhibits the aggregation of blood platelets and thus markedly reduces the risk of myocardial infarction or stroke.

### Public access to clinical trials

On average, ten to 12 years elapse from the first stages of active substance discovery until the finished drug product reaches market maturity. A large proportion of this time is taken up by various phases of the mandatory clinical trials. The costs associated with these clinical trials amount to some €800 million – a huge investment that is nonetheless vital: In most cases, only one of the 5,000 to 10,000 investigated substances will achieve regulatory approval.

Since July 2005, Bayer HealthCare has provided information about the clinical trials conducted by its Pharmaceuticals/Biological Products and Consumer Care divisions in the Internet. Physicians, scientists and the general public can find out about all trials that have got under way since October 1, 2002. By providing this information, BHC has met

expectations regarding the transparency of its research and is acting in harmony with the corresponding position of the Pharmaceutical Associations of Europe, Japan and the United States as well as the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA).

#### Educational measures on drug safety

Business deals with counterfeit drug products represent an increasing international problem. In addition to financial damage, counterfeit drugs can also cause considerable harm to the patient's wellbeing. Many counterfeit drugs contain no active substance at all or do not contain the right active ingredient. Added to this is the fact that sub-standard base material, erroneous manufacturing processes, contamination, additives and improper storage can lead to substantial quality deficits. Bayer HealthCare has now launched its own educational website dealing with this problem. The site offers specific tips on how to recognize counterfeits and avoid their purchase.

#### Bayer HealthCare's sustained commitment

BHC is dedicated to promoting human well-being, as is clear from its range of products. In addition to comprehensive research activities and supporting informational and educational measures, however, BHC is also involved in numerous sponsoring measures and drug donations (see also page 48 et seq.).

In its work to prevent major widespread diseases, BHC is committed to prophylactic measures that take effect at as early a stage as possible. Since 2004, Bayer HealthCare has been motivating people to take their own steps to counteract disease by means of a large-scale campaign: Keeping healthy not only improves the quality of life but also helps patients to save treatment costs and reduces the burden on health care systems. BHC's health initiative is backed by well-known sponsorship partners, such as the German Heart Foundation and the German Diabetes Foundation. In 2005, BHC entered into a three-year project partnership with the

<b>Head office:</b>	Leverkusen
<b>Sites:</b>	100 in all regions of the world
<b>Employees:</b>	approx. 33,800 (2005)
<b>Sales:</b>	€9.43 billion (2005), €8.06 billion (2004)
<b>Specific directives:</b>	"Policy on Health, Safety, Environment and Quality"
<b>Management systems:</b>	HSE systems for health, safety and environmental matters are in place in all sites worldwide. Our drug products are manufactured and monitored in accordance with the quality norms of GMP (Good Manufacturing Practice).
<b>Certifications relevant to the product portfolio:</b>	GMP, ISO 9001, OHSAS 18001, GLP (Good Laboratory Practice)
<b>Member of:</b>	Verband forschender Arzneimittelhersteller (VfA), Bundesverband der Arzneimittelhersteller (BAH), Verband der Diagnostica Industrie e. V. (VDGH), Bundesverband für Tiergesundheit e. V. (BfT), European Federation of Pharmaceutical Industries and Associations (EFPIA), International Federation of Pharmaceutical Manufacturers Associations (IFPMA), Freiwillige Selbstkontrolle für die Arzneimittelindustrie, German Pharma Health Fund e.V. (GPHF)
<b>Website:</b>	<a href="http://www.bayerhealthcare.com">www.bayerhealthcare.com</a>

World Heart Federation, working together with this organization in particular in the field of cardiovascular disease prevention.

Bayer is also collaborating with the Global Alliance for TB Drug Development (TB Alliance). A global clinical trial program has been set up to investigate whether Bayer's antibiotic moxifloxacin (Avalox®) can shorten the standard length of treatment for tuberculosis, which currently takes six months. If the trials proceed successfully, moxifloxacin will be used for tuberculosis indication and made available at an affordable price to patients in developing countries.

In November 2005, BHC again helped the World Health Organization (WHO) in the battle against Chagas' disease with a donation of 250,000 Lampit® tablets (active ingredient: nifurtimox). BHC has now provided a total of 500,000 Lampit® tablets to the WHO. Furthermore, BHC is prepared to make this product available to the WHO at a special price in order to safeguard the long-term supply for the future. Chagas' disease is a widespread parasitic infection in Latin and South America. The causative agent of this disease is transmitted by blood-sucking insects, blood transfusions with infected blood, or in some cases already in the womb of the infected mother. The WHO intends to eliminate Chagas' disease by 2010.

#### **Disseminating knowledge to young people**

BHC's regional activities are focussed on the dissemination of knowledge: BHC regards the qualification of young people as one of the most important investments in the future. To make sure that the process of education is well under way even before vocational training commences, BHC conducts special BayLab programs in Germany, which are designed to stimulate curiosity and scientific spirit. By the end of 2005, more than 3,000 young people had taken advantage of this program annually to improve their knowledge of the natural sciences.

Another long-term educational project has been launched in partnership with the Carl-Fuhlrott-Gymnasium high school in Wuppertal, Germany. The project, entitled "KURS 21 — Schulen unternehmen Zukunft" is an initiative of the renowned "Wuppertal Institut" and the "Institut Unternehmen & Schule" designed to bring students and companies together. It uses talks and transfer projects to promote the establishment and exchange of fundamental perspectives. The objective of the project is to foster better understanding of sustainable development and how each individual can help to promote it.

#### **www**

- 25** Physicians, scientists and the general public can find out here about all trials that have got under way since October 1, 2002.
- 26** A new website provides information about the hazards of counterfeit drugs.

# Bayer CropScience

Bayer CropScience is one of the world's leading crop science companies in the fields of crop protection, non-agricultural pest control, seeds and plant biotechnology. The company has a balanced portfolio of crop protection products comprising insecticides, fungicides and herbicides. Extensive expertise, a high level of innovative skills and an international presence form the basis of the company's success. Bayer CropScience has the highest research and development budget in the global crop protection industry, and will continue to pursue growth through innovative technologies in the future as well.

In the reporting period 2004/2005 Bayer CropScience invested more than €1.3 billion in research and development. The company has launched 16 new active substances since 2000, with another ten scheduled to follow between 2006 and 2011. 193 patent applications were submitted in 2004, and 185 in 2005, confirming BCS's reputation as one of the most innovative companies in the industry.

## Voluntary code of conduct for the crop protection industry

Bayer CropScience subscribes to the International Code of Conduct on the Distribution and Use of Pesticides first published by the Food and Agricultural Organization (FAO) of the United Nations in 1985. This voluntary code of conduct contains rules for all government and private institutions and organizations which deal with crop protection agents, including the crop protection industry. The primary objective is to ensure that crop protection products do as little damage as possible to health and the environment throughout their life cycle, particularly when they are used in the context of integrated crop protection.

In biotechnology Bayer CropScience is committed to ensuring that the science develops responsibly. Our top priority is the safety of the environment,

consumers and farmers. For many years now, millions of farmers all over the world have been successfully using innovative seed enhanced by plant biotechnology methods. We are convinced that society's acceptance of this technology will grow in Europe too as the benefits for the consumer become more evident. We take stakeholder concerns into consideration right from the early development stage.

## Milestones in our sustainability strategy

The main impulse for BCS to develop a sustainability strategy came from the World Summit on Sustainable Development held in Johannesburg, South Africa, in 2002 in conjunction with the restructuring of Bayer CropScience. The process began with a survey of internal and external stakeholders in 2003 which was supported by the British non-governmental organization Stakeholder Forum for Our Common Future. A sound strategy for sustainable agriculture was completed in 2004, and implementation began the same year. The BCS "Sustainability Strategy" project team was established and a comprehensive program was put together. The program's goals are in line with the Group sustainability strategy of systematically anchoring the principles of sustainability at the management level and promoting sustainability in agriculture through innovative products.

A number of new products from Bayer CropScience which reached the market during the reporting period 2004/2005 have received recognition from many quarters. The U.S. authorities granted the new insecticidal seed dressing clothianidine (sold under the Poncho® brand) and the antifungal substances fluoxastrobin and prothioconazole organophosphate alternative/reduced risk status. Organophosphates are some of the most important crop protection agents in Class I as defined by the World Health Organization (WHO). The WHO has established a four-part classification system for labeling crop protection agents. Class I



**Professor Friedrich Berschauer, Chairman of the Board of Management of Bayer CropScience**

*Our sustainability strategy allows us to maximize our contribution to sustainable development in agriculture and to the continued value growth of our company.*

formulations pose a safety risk for operators under certain circumstances. In 1995 Bayer CropScience undertook to successively replace Class I products in order to promote the responsible use of its products and to enhance its product portfolio. Against this background, the classification of our new product clothianidine as an organophosphate alternative is an important step towards this goal. We have now stopped selling some of these products, and the formulation of others has been modified in keeping with the FAO code of conduct. All these measures are taking us closer to achieving our self-imposed goal.

#### **Targeted and effective use of crop protection products**

Our objective is to develop new crop protection products which combine a high level of biological efficacy with lower application volumes and are

particularly well tolerated by people and the environment. Seed dressings, a technology that does justice to all these goals, offers clear economic and ecological advantages. Dressing protects the seed, ensuring that young plants are healthy from the outset and considerably reducing the amount of product that needs to be applied to the fields compared with spraying. This protects ecosystems because beneficial organisms, for example, are not affected by this type of treatment.

We were very concerned about reports from France that some bee-keepers were alleging that unexplained losses of bee populations, particularly in the mid-1990s, were due to our seed dressing Gaucho® which contains the active ingredient imidacloprid. Since then numerous studies carried out by acknowledged international experts have shown that using Gaucho® in various crops does

<b>Head office:</b>	Monheim
<b>Sites:</b>	in over 120 countries
<b>Employees:</b>	approx. 18,800 (2005)
<b>Sales:</b>	€5.90 billion (2005), €5.95 billion (2004)
<b>Specific directives:</b>	Bayer CropScience's voluntary self-commitment to quality, health, safety and environmental protection (QHSE), 2002; Policy guidelines and key requirements for responsible product stewardship, 2004
<b>Management systems:</b>	Bayer CropScience is introducing an integrated management system for quality, health protection, safety and the environment that is in line with the global principles of Responsible Care and sustainable development. Successful implementation will be monitored and ensured by audits, management evaluations and, where necessary, improvement projects.
<b>Certifications relevant to the product portfolio:</b>	ISO 9001, ISO 14001, OHSAS 18001. Individual sites or departments are also certified to ISO 17025, GLP (Good Laboratory Practice), GMP (Good Manufacturing Practice) or local environmental standards.
<b>Member of:</b>	CropLife International (international association of crop protection manufacturers and the bioindustry), ECPA (European Crop Protection Association), EuropaBio – European Association for Bioindustries, DIB (German Association of Industrial Biotechnology), Federal Association of German Plant Breeders, IVA (Association of the Crop Protection and Fertilizer Industry in Germany).
<b>Website:</b>	<a href="http://www.bayercropscience.com">www.bayercropscience.com</a>

not harm bees. We share the bee experts' opinion that the periodic problems with bee health are due to a number of factors including infestation by parasites (particularly Varroa mites), environmental influences and agricultural or bee-keeping practices.

Product stewardship is one of our over-riding concerns relating to the use and disposal of crop protection products. Intelligent application and packaging technologies can go a long way to optimizing product use and safety. Training programs to ensure the safe handling of our products are adapted to the specific needs of farmers in each country. But our responsibility for our products goes far beyond their use; it also includes management of empty product packaging and the disposal of products which have exceeded their shelf-life. Bayer CropScience is one of the lead companies in projects being pursued to ensure that old stocks held by governments are disposed of safely. The company has provided financial and technical support in the elimination of old stocks in a number of countries.

### Modern seed for healthy food

Bayer CropScience and its technologies are making a major contribution to safeguarding harvests and producing high-quality agricultural goods. Crop protection measures and improved seed both have a role to play. For example, we are developing plants which have a greater ability to withstand environmental stresses such as short-term drought. This will be an important factor in the future as climate change occurs in many of the world's agricultural regions.

The rapid increase in life expectancy in many countries is also generating an increased demand for suitable food that can keep people healthy and reduce the risk of diseases. Plant biotechnology will play a growing role in helping to increase agricultural yields and make plants even healthier. Bayer CropScience is collaborating with the American company Cargill to produce enhanced canola oil with a higher oleic acid content and better heat stability from high-quality seed developed by BCS.

These new properties are advantageous in oil for deep-frying, for example, as they are more healthy and confer a better flavor. Genetically modified plants can also be used as a renewable raw material for energy production, as a raw material for industrial processing, or as production systems for plant-made pharmaceuticals.



**27** A special edition of the Courier published by Bayer CropScience focuses on sustainability, providing extensive information on subjects including the BCS strategy for sustainable agriculture, stakeholder relationships and the implementation of product stewardship (PDF file).



**Dr. Hagen Noerenberg, Chairman of the Board of Management of Bayer MaterialScience**

*We take our mission statement VisionWorks literally. We know that visions are required to retain the trust of staff, customers and users, both today and in the future. For that reason, we opt for innovative processes and products that increase the quality of life through their energy efficiency, environmental compatibility and minimal use of resources.*

## Bayer MaterialScience

As one of the world's leading manufacturers of high-tech materials and innovative system solutions, Bayer MaterialScience (BMS) offers products that many industries use as intermediates for everyday goods. As a result, our products have become an integral part of our daily lives and make a decisive contribution to the quality of life. Principal customers are the automotive and construction industries, the electrical/electronics sector and manufacturers of sports and leisure articles, packaging and medical equipment. Innovative developments from Bayer MaterialScience include the high-tech plastic polycarbonate, polyurethane raw materials for rigid and flexible foams, for elastomers and as bases for coating, adhesive and sealant systems. Bayer MaterialScience's key brands include Makrolon®, a polycarbonate used to produce CDs and DVDs, Desmophen and Desmodur®, raw materials for foam products in the furniture and construction industries, and Baydur®, a polyurethane system for technical housings. True to its mission statement "VisionWorks," research and development are a key element of BMS, an innovation-driving company that registers a new patent almost every day.

### **Focus on energy efficiency and CO<sub>2</sub> prevention**

The Polyurethanes Business Unit (which develops and produces intermediates for flexible foams, rigid foams, integral skin foams, elastomers, etc.) and the Polycarbonates Business Unit (which includes the premium brand Makrolon®) are responsible for 70 percent of Bayer MaterialScience's sales. Polyurethanes are used in car seats, refrigeration and heat insulation, and in plastic frames for solar modules. Polycarbonate applications cover everything from vehicle windscreens and stadium roof constructions to laminate systems for drivers' licenses and all kinds of ID cards. Many of these applications provide heat insulation or replace heavier materials such as metal or glass produced using greater quantities of raw materials.

The high-grade plastics enable significant energy and CO<sub>2</sub> savings while delivering higher product quality (see page 29).

### **Energy-saving chlorine production**

The production of chlorine is one of the most energy-intensive processes in the chemical industry. Chlorine is an important raw material for the production of polyurethane raw materials and polycarbonates. By using the new oxygen depolarized cathode technology in the electrolysis of hydrochloric acid to chlorine, Bayer MaterialScience has greatly improved the energy efficiency of this process. Oxygen depolarized cathode technology requires up to 30 percent less electrical energy than the conventional diaphragm method. BMS commissioned the first industrial plant to use this new method in the Brunsbüttel factory in 2003 and received an award for this innovation from the American Electrochemical Society (ECS) in 2005.

### **Car roofs of the future**

The latest Mercedes A and B class have roofs featuring five transparent, gray-toned lamellas made from the polycarbonate Makrolon® AG2677 from BMS. In terms of its property profile, this material is a specially optimized grade of polycarbonate for automotive glazing. Its use opens up a world of completely new design options that would not have been possible using glass. A further plus is that a Makrolon® roof makes the vehicle lighter, which in turn means less fuel consumption. Because of its many processing possibilities, such as injection molding, polycarbonate significantly reduces system costs by integrating a variety of functions.

### **Renovating drinking water mains**

Drinking water mains may be hidden under the ground, but they play a vital role in our daily lives. Many water mains pipelines are outdated and urgently require maintenance. In the south-west of England, for example, general renovation work is

being carried out on the drinking water mains system, which dates back in part to Victorian times. Take Plymouth in the county of Devon. This was the first mains system with a large interior diameter of 36 inches (91.4 centimeters) to be renovated and given an interior polyurethane protective coating formulated using Bayer MaterialScience raw materials. The project was honored by the UK society for Trenchless Technology (UKSTT) in 2003 as the best renovation project for large mains systems. Modern coatings have to minimize interruption to the water supply, allow reliable maintenance in a whole range of climatic conditions and be insensitive to poorly prepared surfaces, as well as complying with national drinking water standards. The new solvent-free, environmentally friendly and sprayable polyurethane coating developed jointly by Bayer MaterialScience and E.Wood, meets all these criteria. A key component in the coating is our Desmodur® XP 2599. Using this new coating system, damaged drinking water mains manufactured from different materials can be put back into long-term operation without any reduction in capacity. The stability of the pipelines is safeguarded in the long-term even when the original pipeline decomposes. Heavy water losses are avoided and the duration of the maintenance work is also much

shorter than in the past. This enabled the complete renovation of a 150-meter section of pipe with a series of domestic connections within one and a half days. With traditional technology, this would have taken around a week and a half. This was reason enough for the pioneering technology to receive the Queen's Award for Innovation in 2006.

#### **Innovative products**

Composite elements are a key focus of research and development in the field of polyurethanes. The expert combination of lightweight materials, which can also be produced from renewable raw materials, enables the generation of completely new property profiles using specially developed polyurethane systems. The outstanding property of these elements is their very high resistance to mechanical loading and their low weight. State-of-the-art technologies enable the efficient production of elements with hitherto unattainable contours, e.g. for use in automotive engineering. Examples include the Multitec® spraying process and Baypreg® honeycomb technology, which are used to manufacture the parcel shelf of the Opel Vectra Caravan and the rear spoiler on the Daimler-Chrysler Crossfire.

<b>Head office:</b>	Leverkusen
<b>Sites:</b>	over 40 in all parts of the world
<b>Employees:</b>	approx. 18,800 (2005)
<b>Sales:</b>	€10.7 billion (2005), €8.6 billion (2004)
<b>Specific directives:</b>	"Policy for Health, Safety, Environment and Quality" (2004)
<b>Management systems:</b>	Based on the principles set out in the Responsible Care Global Charter, BMS has an integrated management system in place covering all aspects of health protection, safety, quality and environmental protection.
<b>Certifications relevant to the product portfolio:</b>	Based on the integrated management system, certification to ISO 9001 applies for all sites and divisions.
<b>Member of:</b>	PlasticsEurope, ACC, API, ISOPA, ALIPA, EUROCHLOR and others
<b>Website:</b>	<a href="http://www.bayerbms.de">www.bayerbms.de</a>

### Managing the future

Visions and ideas are the catalyst and are found at the start of the innovation chain. Innovation is one of Bayer MaterialScience's three main corporate goals, alongside efficiency and growth. The company currently generates around 20 percent of the Group's consolidated sales from new products and applications developed in the past five years, and some 2,000 projects are in the development pipeline.

Alongside the actual benefit it brings, the safety and environmental relevance, and thereby acceptability in society, of each innovation or new technology is crucial for deciding whether it can be used widely. To this end, BMS consults closely with politicians and scientists and supports the launch of research initiatives in the expert committees of the chemical industry.

### Opportunities for nanotechnology

Great expectations are pinned on nanotechnology and nanomaterials, in both engineering and economic terms. It is hoped that they will give rise to opportunities for developing innovative products and processes that open up new areas of application and for further developing conventional products. This includes products and processes aimed at reducing everyday contamination of the environment or enabling highly efficient use of our natural resources. As a pioneer in research, Bayer is therefore keen to harness nanotechnology for developing innovations.

The new technology is increasingly important in the chemical industry for use in creating high-tech materials. Bayer MaterialScience has considerable expertise in the field of nanotechnology and sells many products that are based on this technology, including adhesive raw materials, polycarbonate blends with enhanced flame-retardant properties, scratch-resistance coatings, plastic media with high data-storage capacity, and materials for the electrical industry.

As well as paving the way for innovation, Bayer also conducts its own risk assessments in the field of nanotechnology. To record potential risks, Bayer works together with partners from industry, science and research in cross-company projects such as "NanoCare" and "Tracer" which are sponsored by the German Ministry for Education and Research (BMBWF) and its initiative "Material innovations for industry and society." One such project is with the Institute for Toxicology and Genetics at the Helmholtz Research Center in Karlsruhe.

In addition to these projects, Bayer is also involved in further initiatives and expert groups of national and international chemical associations, e.g. in working groups organized by the German Chemical Industry Association (VCI) and in the "Responsible Production and Use of Nanomaterials" working group of the German Society for Chemical Engineering and Biotechnology (DECHEMA).



28 Makrolon® roof in the Mercedes A-Class

29 Nanotechnology

# Bayer Business Services

In its role as a “shared service center”, Bayer Business Services (BBS) provides the Group with IT services worldwide. Bayer Business Services also offers these services to companies outside the Bayer Group and the public sector as business process outsourcing. The services from Bayer Business Services focus on IT, telecommunications, purchasing, logistics, HR, management services and finance and accounting.

## BaySIS® bundles site information

One of these services is the “Bayer Site Information System” (BaySIS®) developed in-house, which is a universal program for entering and analyzing environmental and security data. Each year, the 500 or so sites that belong to the Bayer Group provide more than 50,000 data records about the use of raw materials and energy, the volume of wastewater and waste, emissions of greenhouse gases and transportation accidents. This data collection enables Bayer to provide its consolidated group data at the touch of a button and to make it available in the first quarter of each new year. This makes BaySIS® indispensable to the company’s HSE (Health, Safety, Environment) management and Bayer’s sustainability reporting.

## Optimization of purchasing

As an additional service, Bayer Business Services helps its customers, for example, to tailor their strategic purchasing to cover demand. This can make a significant contribution to a company’s value added. To achieve this, we negotiate purchasing contracts with suppliers, for example, which can then be transferred into electronic catalog systems. Thanks to this and other solutions, the companies in the Bayer Group have been able to achieve a degree of automation in procurement of over 80 percent. Bayer Business Services has developed special modules such as the “Supplier Relationship Management” (SUPREME) program together with the purchasing departments of the subgroups and the other service companies. With these modules, ecological and social criteria can be queried when selecting and evaluating suppliers (see page 16 et seq.).



**30** Additional information about BaySIS®



**Dr. Andreas Resch,**  
Chairman of the  
Executive Board  
of Bayer Business  
Services

*Bayer Business Services takes its obligation to support sustained development very seriously. Our systems and services help Bayer to meet its economic, ecological and social responsibilities. BaySIS and SUPREME are two examples of how Bayer Business Services supports sustained development.*

<b>Head office:</b>	Leverkusen
<b>Sites:</b>	Argentina, Brazil, Germany, PR China, Singapore, Spain, United Kingdom, United States
<b>Employees:</b>	approx. 8,800 (incl. Local Services and trainee pool; 2005)
<b>Specific directives:</b>	Voluntary undertaking of Responsible Care by Bayer Business Services GmbH, 2003
<b>Certifications relevant to the product portfolio:</b>	ISO 9001:2000, SAP Customer Competence Center
<b>Member of:</b>	Institute of Electronic Business (IEB), IT Service Management Forum, German-language SAP user group (DSAG), Bundesverband für Materialwirtschaft, Einkauf und Logistik e. V. (Federal Association of Materials Management, Purchasing and Logistics) (BME)
<b>Website:</b>	www.bayerbbs.de



**Achim Noack,**  
**Managing Director**  
**of Bayer Technology**  
**Services**

*We use innovative problem-solving to make our contribution to improving yields or reducing emissions and will thus support processes for protecting the environment and conserving resources. We take it upon ourselves to design and build plants with the highest levels of technology and safety. As primary elements of Responsible Care, environmental and health protection and occupational and plant safety are additional important considerations.*

## Bayer Technology Services

Bayer Technology Services offers fully-integrated solutions over the life cycle of chemical and pharmaceutical plants: development, design, construction and process optimization. Bayer Technology Services serves within the Bayer Group as the scientific and technical backbone for the development of new technologies and processes.

One example from the company's product portfolio is BayFlotech®, a process introduced in 2005 for removing suspended particles from wastewater and process flows. This process uses a patented air saturation technology that requires only small amounts of flocculation aids and energy to achieve maximum solids separation rates with good environmental compatibility and low operating costs.

### Process optimization and environment-oriented solutions worldwide

Bayer Technology Services is the Bayer Group's competence center for process optimization. It plays a role in meeting the responsibility for our ecological and social concerns throughout the world. This includes implementing international standards and investing in state-of-the-art technology at all sites. All of our sites are certified according to demanding

quality management systems such as ISO 9001. We are proud of our construction site in Shanghai, China, currently our largest anywhere in the world, where roughly 3,500 workers are active each day with an injury rate of only 0.1 per million hours worked. This is a clear demonstration of our success in implementing uniform standards worldwide.

One example of environment-oriented innovations at Bayer Technology Services is a new process for the transportation of large quantities of salt for chlor-alkali electrolysis. Alone for the Dormagen, Germany site, up to 1,600 metric tons of salt for the production of sodium lye and chlorine were transported in open trucks until 2003. With the development of the "slurry process," the salt – which tends to clump – can now be pumped from the harbor through a pipeline, eliminating roughly 25,000 truck trips a year between the pier and the electrolysis unit in Dormagen. The process has also met with great interest outside the Bayer Group, and has already been sold to a number of international companies.

**www**

**31** Chloralkali electrolysis

<b>Head office:</b>	Leverkusen
<b>Sites:</b>	Belgium, PR China, Germany, Mexico, Switzerland, United States
<b>Employees:</b>	approx. 2,100 (2005)
<b>Specific directives:</b>	Policy: Health protection, safety, environmental protection and quality at BTS GmbH; HSEQ management system for health protection, safety, environmental protection and quality
<b>Certifications relevant to the product portfolio:</b>	ISO 9001 (Design and Construction of Industrial Plants), SCC (Construction and Erection Activity for Industrial Plants), ISO 17025 (Materials Testing) Profepa Industria Limpia (environmental protection certificate in Mexico as site operator)
<b>Member of:</b>	Forschungsgesellschaft Verfahrenstechnik e. V. (GVT) (Research Society for Process Technology), Verein Deutscher Ingenieure – Gesellschaft Verfahrenstechnik und Chemieingenieurwesen (VDI – GVC) (Association of German Engineers – Society for Chemical and Process Engineering), Interessengemeinschaft Automatisierungstechnik der Prozessindustrie (NAMUR) (Association of Users of Automation Technology in the Process Industry)
<b>Website:</b>	www.bayertechnology.com

# Bayer Industry Services

Bayer Industry Services (BIS) offers services in the chemical and technical sector. These cover utilities, waste management, infrastructure, safety, technical services, analytics and training and continuing education. BIS is the manager of the three interlinked Bayer Chemical Parks in Leverkusen, Dormagen and Krefeld-Uerdingen and serves more than 50 partner companies that have located to the Bayer-owned sites – including Lanxess AG. BIS also markets plots and buildings to companies wishing to set up operations there and helps potential entrepreneurs put their business ideas into practice through the “Bayer Chemical Start-Up Initiative.” The companies that have moved to the Chemical Parks have been convinced by the broad portfolio on offer: ideal logistical and technical conditions for business including a variety of product networks and a comprehensive range of services.

Bayer Industry Services provides essential services for the Bayer Group’s personnel management processes. Among other tasks, the company handles the company suggestion plan, the “Bayer Ideas Pool.” For its own employees BIS launched a new reintegration management program (BEM = Betriebliche Eingliederungsmanagement) at the end of 2005: Through this the company offers advice and assistance to all personnel who have been unfit for work for a continuous or total period of more than six weeks within a year. Since this initiative is managed

within the context of the company’s health management system, the reintegration measures it entails can be combined with stress management and health promotion programs.

BIS also plays a central communication role for the German sites by acting as a direct contact for the media and the public. The service company issues information on current developments at the Chemical Parks and organizes large-scale Bayer events such as the nationwide Open House day, a safety dialogue with the local community and tours for visitors to the sites.

## Environmental research

BIS is also active in researching and developing new environmental technologies. For example, a process developed in-house removes metallic mercury cost-effectively from the flue gas of hazardous waste incinerators. And in July 2005 the company launched a project to research the possibility of obtaining biogas through the fermentation of the organic constituents of sewage sludge and then disposing of the residual inorganic matter safely in the company’s hazardous waste incinerator. The European Union is promoting the project as part of its LIFE environmental support program (see page 75).



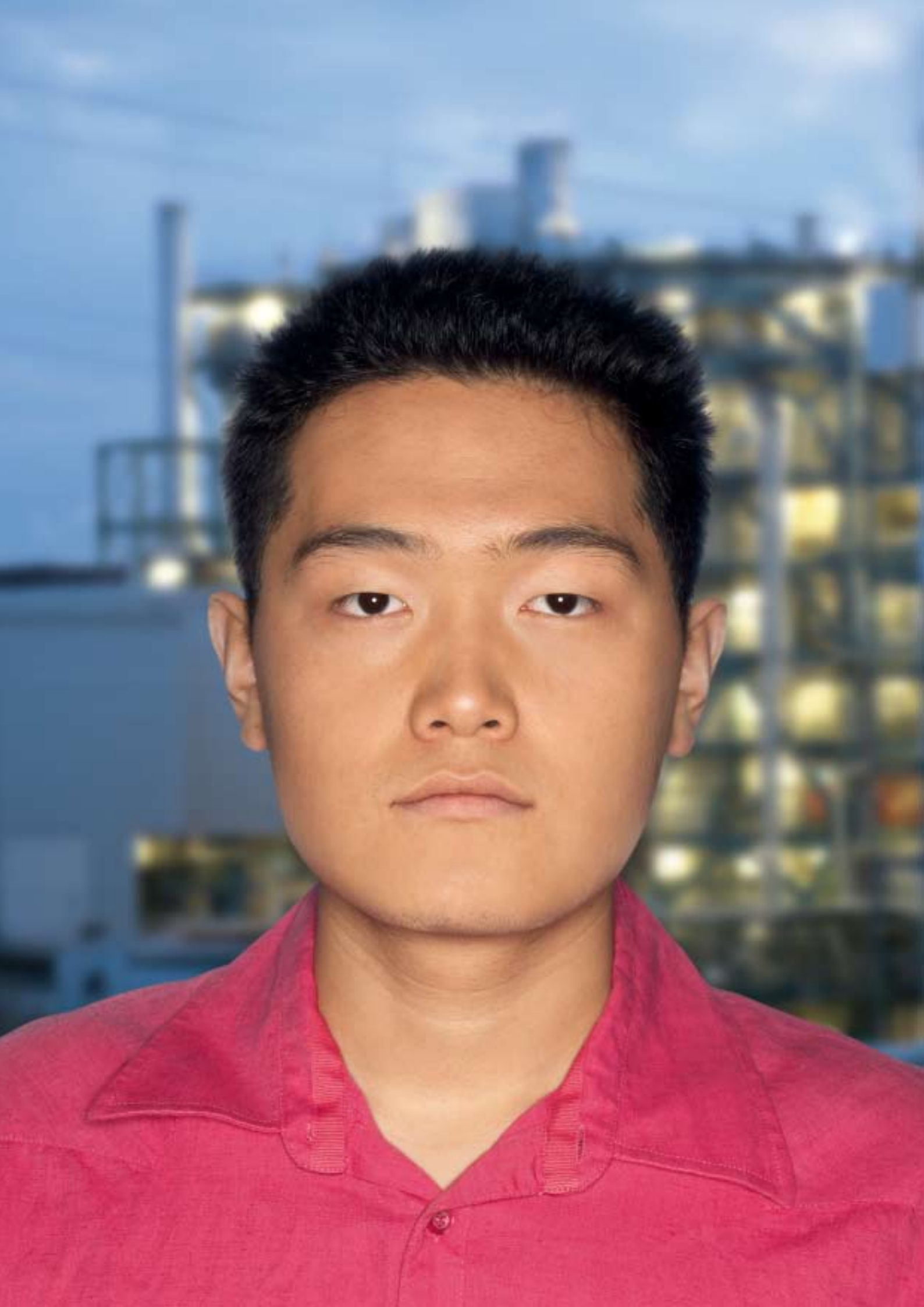
**32** Overview of environmental and disposal services



**Dr. Klaus Schäfer,**  
Chairman of the  
Executive Board  
of Bayer Industry  
Services

*Responsibility for the environment, the workplace and society in general is among our core values. As an innovative service-provider, we are committed to benefiting our customers and employees alike. In all other areas too we are focused on one thing: We want to continually improve and make a sustainable contribution to a future that is worth living in.*

<b>Head office:</b>	Leverkusen
<b>Sites:</b>	Leverkusen, Dormagen, Krefeld-Uerdingen Bayer Industry Services is a joint venture between Bayer AG and Lanxess AG
<b>Employees:</b>	approx. 10,900 (incl. trainees; 2005)
<b>Specific directives:</b>	“Policy on Health Protection, Safety, Environmental Protection and Quality” (2004), “RC Commitment of Bayer Industry Services” (2003)
<b>Certifications relevant to the product portfolio:</b>	ISO 9001:2000, ISO 14001, EfbV (German Ordinance on Specialized Waste Management Companies), SCC (Contractors), ISO 17025, GLP, GMP, § 25 LfG (German Agricultural Promotion Act) BAM/OFD (Federal Ministry for Material Research and Examination/Higher Financial Authorities), § 15 (4) TrinkwV (German Ordinance on Drinking Water) 2001, ZLS (Central Authority of the Federal States for Safety) § 9 para. 6 German Ordinance on Dangerous Goods, right to inspect contaminated sites on real estate belonging to the German Federal States and according to the German Association for the Quality Assurance of Secondary Fuels
<b>Member of:</b>	Neues Unternehmertum Rheinland e. V. (Rheinland Association of New Business), Wuppertal division
<b>Website:</b>	www.bayerindustry.com



# Protecting the world's second largest tidal flat

## Jung-Ho Jung South Korea

*Measuring over 400 square kilometers, Saemangeum in Korea is the second largest tidal flat in the world. Here, migratory birds stop on their way from Asia to Australia, the area itself protects the inhabitants of the coastal region from storm surges and the silt acts as a natural filter, cleaning polluted water. The South Korean government is planning to dry up the tidal flat to use it for agricultural purposes. Jung-Ho Jung, a member of a non-governmental organization, is lobbying for the conservation of this valuable habitat: "We must preserve this natural area to maintain an ecological balance in the region and protect the population."*

*Photo: Jung-Ho Jung in front of the waste recycling unit in Leverkusen-Bürrig*