



News Release

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Industrial research of the highest scientific caliber:

Otto Bayer Medals awarded for outstanding research

- Three research teams from Bayer commended for innovations in healthcare, nutrition and high-tech materials
 - Bayer has the highest level of research and development spending in the German chemical and pharmaceutical industry
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Leverkusen, September 3, 2008 – Scientists working for the Bayer Group have been awarded the Otto Bayer Medal for their excellent achievements in three research projects. This prize is awarded for successful research work related to new products or applications and new developments for future markets. Werner Wenning, Chairman of the Board of Management of Bayer AG, and Dr. Wolfgang Plischke, the member of the Bayer Board of Management responsible for innovation, technology and environment, presented the awards to the winners at a ceremony held in the Palladium in Cologne on September 3, 2008. Attended by some 750 research scientists, the ceremony tied in with the Bayer Science Day.

“The results produced by our researchers and developers are a cornerstone of our international competitiveness,” Wenning commented. The award of the Otto Bayer Medal documents the outstanding importance that the company attaches to research. In 2008, Bayer expects to spend some €2.8 billion on research and development - more than any other company in the chemical and pharmaceutical industry in Germany. “The good development of our new healthcare products, the promising pipeline candidates in both Pharmaceuticals and Crop Protection, and the new applications and technologies involving our high-tech materials show how great Bayer's innovative strength is,” Wenning explained.

Prizes were awarded to research work from all three subgroups: Bayer HealthCare, Bayer CropScience and Bayer MaterialScience. “The award of the Otto Bayer Medal is much more than just a symbolic gesture. It is an element of our corporate and research culture, a culture that promotes creativity and innovation, supports achievement, and rewards success,” said Dr. Plischke, the Board member responsible for research. “Our aim is to open our company further through efficient cooperations and strategic partnerships with a view to specifically expanding and complementing our own expertise with excellence from outside.”

The projects in which the 2008 winners of the Otto Bayer Medal are involved reflect the wide spectrum of research activities at Bayer. They range from innovative development candidates for cardiovascular indications through stress reduction in plants to soft-touch coatings.

Bayer HealthCare: Soluble guanylate cyclase (sGC) as a new therapeutic opportunity in cardiovascular disease

Improved therapy options are urgently needed for both acute heart failure and pulmonary hypertension, two diseases which greatly impair patients’ quality of life and are associated with very high mortality rates.

A gas produced in the body – nitric oxide, the chemical formula for which is NO – plays a fundamental role in the human circulation. It can activate an enzyme to widen blood vessels, thus reducing the burden on the heart and lungs. This enzyme is known by the experts as soluble guanylate cyclase. It thus plays a central role in the regulation of the cardiovascular system.

Although medicines based on NO have been around for over a hundred years, they have some serious disadvantages. They become less effective the more often they are used – and that is a fundamental problem for patients with chronic disorders. The Bayer scientists had the idea, rather than working with NO, of modifying the activity of the key enzyme – soluble guanylate cyclase – directly and developing potent medicinal products on this basis.

A group of scientists from Bayer HealthCare, led by Dr. Johannes-Peter Stasch, has been awarded the Otto Bayer Medal for their work in this field. The team, comprising Dr. Raimund Kast, Dr. Frank Wunder, Dr. Alexander Straub and Dr. Cristina Alonso-Alija, succeeded in identifying two new development candidates with a new mode of action: an sGC activator for treating acute heart failure and an sGC stimulator for pulmonary hypertension. Both compounds are currently in Phase IIb clinical trials. The first major Phase III study is expected to start before the end of 2008.

Bayer CropScience: The insecticide Confidor increases stress tolerance in plants

The world population continues to grow – and with it the demand for food products to feed people and animals. But there is no way of increasing the amount of agricultural land currently available. On the contrary, arable land is disappearing as a result of erosion or desertification. Moreover, factors such as heat, drought and salty soil can reduce the yields of crops achievable under optimal conditions by up to 80 percent. Plants need to be made more resistant to climatic conditions to prevent this from happening. Their “stress tolerance” needs to be increased in order to safeguard harvests.

Dr. Wolfgang Thielert has been awarded the Otto Bayer Medal for his work on verifying and elucidating the “greening” effect of Confidor. In addition to its insecticidal properties, the active ingredient in this product has the ability to protect plants under stress, and this helps them to cope better with abiotic (e.g. drought, lack of oxygen, too much ozone or salt) and biotic (attack by fungi or nematodes) stress factors. In combination with new, stress-tolerant varieties of plants, this product will help to reduce harvest losses even further.

Bayer MaterialScience: Waterborne soft-touch coatings based on polyurethanes

Pleasant, soft, and warm – these are attributes seldom associated with plastics. To create these effects, plastic surfaces are modified by applying soft-touch coatings. These functional coatings yield surfaces with a very special touch. They give “cold, hard” plastic materials – in car interiors, for example – a warm, pleasant handle and a luxurious, high-quality “ambience.” In the electronics sector too, soft-touch coatings are increasingly being used in high-quality equipment such as cell phones and computer housings.

During work aimed at developing polyurethane dispersions for highly flexible coatings for plastics, the research and development team comprising Dr. Harald Blum, Dr. Joachim Petzoldt, Uwe Klippert and Dr. Torsten Pohl discovered coatings with a very unusual touch. This unexpected discovery gave the team the idea of using these products to develop coatings with a soft-feel effect.

The new system is based entirely on Bayer raw materials. The waterborne coating system not only boasts an excellent soft-feel effect and good resistance properties, but also sets a new environmental standard by largely eliminating the use of solvents.

The Otto Bayer Medal was created in memory of Professor Otto Bayer, the pioneer of polyurethane chemistry and a former head of research at Bayer AG, who died in 1982 (and is not related to the founder of the company). It has been awarded regularly to outstanding research scientists at Bayer since 1984.

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