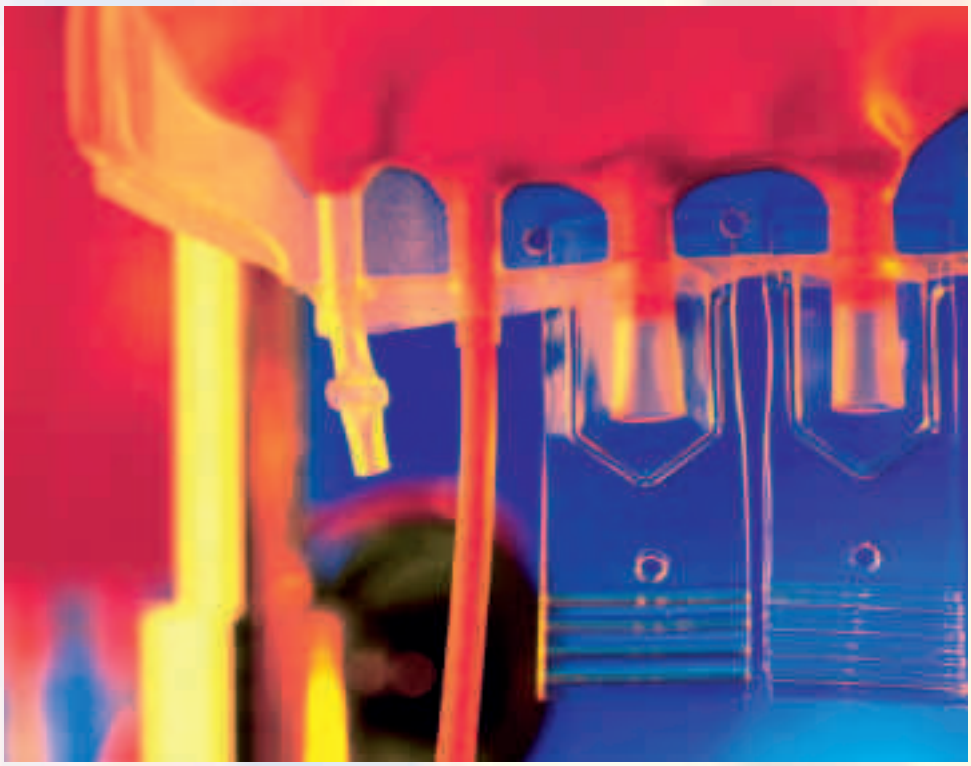
Bayer's subsidiary for innovations

Concepts for tomorrow's world



Medical technology: Catheters that combine active ingredients with polymers constitute one of the business areas of the new subsidiary Bayer Innovation GmbH.

If you want to achieve something really new, you have to change your ways. This is why Bayer has set up a subsidiary called Bayer Innovation GmbH. Its aim is to turn what appear to be exotic technologies into new areas of business that stretch far beyond the activities of Bayer's subgroups. Catheters made of bioactive polymers are the first example of Bayer's resolve to provide its customers with integral solutions.

A catheter is really nothing more than a narrow plastic tube. It is an everyday product used to supply patients with infusions and medicines. Doctors and nurses rarely give it a second thought – after all, it seems unlikely that the product could be further improved. And yet the catheter could turn out to be an important milestone for the long-established Bayer Group: it could be the first step towards the emergence of a new business area with promising growth potential.

The nerve center of the project, Bayer Innovation GmbH, was set up several months ago on Merowinger Square in Düsseldorf. The Bayer Group deliberately located its new subsidiary away from the corporate headquarters in Leverkusen. The rented floor of the Technology Center in the vicinity of Düsseldorf University seems a world away from the company's head office, so steeped in tradition. The atmosphere is more like that of a start-up company. The new offices are occupied by the managing directors, Professor Fred Robert Heiker and Ralph Arnold, and ten members of staff. The whole team is busy poring over market studies and business plans, preparing investment strategies and looking for partners, sponsors and contacts from young enterprises. They have all put their heart and soul into this major undertaking and like to refer to their new enterprise by its acronym, BIG. Their task is to supplement the Bayer Group's business portfolio with concepts and innovative products, breaking into new growth markets which Bayer's expertise can turn into further opportunities.

The idea behind the project is aptly illustrated by the little catheter. The plastic tube may look rather inconspicuous, but it is "an excellent gateway to the medical technology business," says Dr. Ralf Dujardin, Portfolio Manager at Bayer Innovation.

Hospitals all over the world carry out a total of around 13 million catheter treatments every year. But approximately one in 20 patients develops an unpleasant or even dangerous infection at the point where the catheter enters the body. The infection proves fatal for around 26,000 people every year.

Hospital hygiene is of course the be-all and end-all when it comes to using catheters. By coating the catheters with antibiotics, manufacturers are

Innovation strategists: Professor Fred Robert Heiker, Ralph Arnold and Dr. Ralf Dujardin (from left) aim to open up new business opportunities for Bayer.

constantly trying to hold in check the pathogens that cause an infection. But the effect only lasts for a few days because the germs simply develop once the coating has dispersed. Since catheters are often used for several weeks, all the coating does is delay the risk of infection.

Antibiotics in the plastic tube prevent infections

Drawing on their expertise in plastics and their vast experience with antibiotics, Bayer researchers developed a polymer whose chemical structure incorporates molecules of Bayer's antibiotic Ciprobay®. The major advantage of this is that the coating no longer wears off. Pathogens are controlled throughout the lifespan of the catheter because the antibiotic is continuously released from the plastic tube to fight off infections.

The plastic catheter is a typical example of how a start-up company fills a niche with a new product and can then use it as a springboard to acquire new markets. And it is a perfect opportunity for Bayer Innovation, particularly since an analysis of more than 300 potential areas identified medical technology as a highly promising future market. The new subsidiary has a clear business plan: the central venous catheter is to be followed up by other indications in which infections often pose an even bigger problem. And the principle of polymers with biological functions can also be applied to totally different fields – bandaging materials treated to prevent wound infections, for example, or plasters to stimulate the growth of new skin. Other potential projects are materials for artificial limbs and applications in neurology, ophthalmology and dentistry. When you launch a new business, you never know where it might end. When Thomas Alva Edison invented his carbon filament lamp in 1879, he could hardly have imagined that it would one day spawn the biggest company in the world. And so for Heiker, the most important thing initially is that the new ideas for infection-fighting catheters prove successful. Preliminary tests have already shown antibiotic-containing polymers to be effective. And a company has already been found to make them into modern catheters that meet hospital requirements. Heiker is currently holding talks with potential partners for a joint venture with Bayer Innovation to market the catheters and any future biofunctional polymers.

"In future it's all about Bayer offering its customers more than just the best materials," explains Heiker. After all, materials such as plastics, crop protection products or pharmaceuticals are quickly exposed to severe pricing pressure. "Tomorrow's customers will want us to rack our brains over their problems and come up with intelligent solutions." Heiker describes his vision as follows: "Our objective is for Bayer to be able to supply not just materials for its customers but also solutions." What initially looks like a crazy idea could one day lead to a breakthrough and a successful area of business for the whole Bayer Group. "In Edison's time, when people were used to using gas flames," says Heiker, "even the electric light bulb seemed like an outlandish idea."

www.bayer-innovation.de
Consult the Group website for further information on Bayer's new subsidiary (German language only).

Risk for patients

The risk of infection through a catheter has long been recognized. Various germs (Staphylococcus, Escheria) are responsible for the infections.

Application	Infection rate (in percent)	Pathogen
Cannula	0.02 – 3.0	S. epidermis S. aureus
Peripheral venous catheter	0.2 – 0.5	S. epidermis S. aureus
Dialysis catheter	5.0 – 36	S. epidermis S. aureus
Central venous catheter	3.8 – 12	S. epidermis S. aureus
Urethral catheter	5.0 – 10	E. coli