



# BAVARIA IN THE NEWS

What's inside

**Eichstätt:**  
Germany's employment  
champion

**From Bavaria's prize-  
winning scientists:**  
superconductors for electricity  
systems and a super-detailed  
understanding of RNA  
*See page 2*

**Oberpfaffenhofen:**  
Germany's outer space center  
takes on inner space and  
world problems

**All from Bavaria:**  
Germany's best eco-managers  
*See page 3*

**Sights to be seen:**  
Bavaria's heritage of humanity

**Foundation stone:**  
Lear's R & D center in Kronach,  
Nuremberg's new direct rail  
link to Asia

**Trade fairs in Munich  
and Nuremberg**  
*See page 4*

## **Bavaria's exports in 2007: the briefing** (preliminary figures)

**Total exports**  
€150 billion  
**Largest markets (national)**  
USA, Austria and Italy  
**Largest market**  
the EU (more than 62% of total)

## **Bright future for Germany's most promising product**

It's going to brighten up the world, slash electricity bills and create a whole new generation of electronic devices and illumination designs.

No wonder that Osram's thin-film technology won the 2007 staging of the German Future Prize, awarded each year by a blue-chip panel to the innovation possessing the greatest technological and business impact.

Developed by a Regensburg, Bavaria-based subsidiary of Osram, one of the world's two largest producers of lights and illumination systems, the thin-film technology is used in producing LEDs (light-emitting diodes). These tiny chips form the heart of electronic signals, flashlights and anything else requiring low use of space and high energy efficiency.

The thin-film technology boosts the chips' energy efficiency and output and range of

illumination. The result: LEDs which are eminently capable of replacing standard light-bulbs – and of serving as the illumination for ultra-miniature projectors, monitors and put-it-anywhere, design-it-anyway you like lighting.

The thin-film technology was developed by Dr. Klaus Streubel and by Dr. Stefan Illek, staff scientists at Osram Opto Semiconductors ([www.osram-os.com](http://www.osram-os.com)). The company is one of the world's leading manufacturers of LEDs and also of OLEDs. These "organic light-emitting diodes" have the efficiency and flexibility needed to create whole new kinds of products, including self-illuminating clothes, drapes and canopies, and large-area displays and monitors.

Osram Opto's brightest innovation in this area: its white OLED, which is invisible when not in use, and which delivers an exceptional brightness.

## **Small companies help produce a huge exports record**

In 2007, Bavaria didn't merely set a new record for exports. The state smashed it. Bavarian manufacturers sold goods worth more than €150 billion outside Germany in 2007, according to preliminary figures.

This exports record – the 13<sup>th</sup> in a row for Bavaria – was up a whopping €25 billion over 2006's total.

To find out why the state's manufacturers are so successful, go to Germering. The southwestern Munich suburb is home to Pico Dosiertechnik, which, though much younger and smaller than Siemens, BMW, Linde, Wacker, MAN and other long-estab-

lished state manufacturing giants, has three things in common with them.

Founded in 2002, Pico has developed and now manufactures products urgently required by the fast-growing business communities in China, India, Russia and elsewhere.

In Pico's case, the products are micro-dosage systems. Operating with an unprecedented precision and rapidity, these dose out small or even microscopic amounts of glue, lubricants and other fluids required in production operations.



These systems deploy a breakthrough technology. It enables the no-contact dispensing and application of fluids, and was developed by Rainer Möst und Michael Rennefeld, the company's founding parents.

The microdosage systems' innovativeness and reliability have made them best sellers around the world. Some 75% of the company's revenues stem from sales made outside Germany. The comparative figure for 2003: 20%. And this rise was achieved while the company was undergoing a ten-fold rise in turnover during 2003 – 2007. For 2008, Michael Rennefeld is forecasting a 50% increase on 2007's sales of €4 million.

These achievements won Pico a high honor: 2007's Bavarian Export Prize, awarded each year to the state company most successful in entering and expanding into international markets.

For further information: [www.picodostec.de](http://www.picodostec.de)

**Key figure**

**€ 5.3 billion.** That's the total value of greater Munich's real estate transactions in 2007. That was the largest figure ever registered by a business area in Germany. The comparable figures for Munich in 2006 and 2005: €5 billion (itself an all-time record) and €1.5 billion.



Bavaria in Europe

## Inside technology

**From Bavaria's Leibniz Prize-winning scientists: precise peeks inside cells and atoms**

The Leibniz Prize is Germany's most important scientific award, in terms of both prestige and endowment (€2.5 million for each winner/winning team). Among this year's winners are the Bavaria-based Elena Conti and Jochen Mannhart.

Much is known about RNA. That it serves as the cell's messenger and master builder. That it goes about these jobs by making its way out of the cell's nucleus into the "outer reaches" of the cell. That its intra-cellular transport is undertaken by proteins called "factors".

But how one key aspect of this transport remained unknown, at least until **Elena Conti** started her research: how these factors recognize and relay the RNA. Conti's discovery, made using X-Ray crystallography: the RNA clicks itself into EJC ("exon junction complex") proteins which it has "recruited" for this purpose. These proteins, in turn, turn the factors into "conveyor belts" sending the RNA on its way. This key discovery is just the latest of intracellular biological breakthroughs made by Conti, who was born in Italy in 1967, earned her PhD at London's Imperial College, did post-doctoral work in the Rockefeller University in New York, and who has been a director

of Martinsried's renowned Max Planck Institute of Biochemistry since 2007.

Conti is also a member of Bavaria's Center for Integrated Protein Science (CPISM) excellence cluster and is an honorary professor at Munich's top-ranked Ludwig-Maximilians University.

Born in 1960, **Jochen Mannhart** won his Leibniz Prize for no less than three major breakthroughs. Together, they will revolutionize the world's electricity grids. A professor of experimental physics at the University of Augsburg since 1996, Mannhart first came up with a scanning probe microscope with the greatest resolution ever achieved. This microscope enabled Mannhart to peer into atoms and at their component particles.

Mannhart used the resulting data to investigate and engineer high-temperature superconductors – materials which are capable of transmitting electricity without undergoing the dramatic losses characteristics of today's cables. In addition to their greater efficiency of electricity transmission (twice that of conventional cables), Mannhart's superconductors are space-saving and easy to manufacture.

## Inside the state

**Eichstätt: the "e" stands for employment**

Located in south central Bavaria's beloved Altmühl valley, the county of Eichstätt is highly popular with cyclists, canoeists, hikers and employers. The latter, in turn, have given the county Germany's lowest rate of unemployment: 1.3% as of November 2007.

Since one of these employers is ultra-successful Audi AG, headquartered in right-next-door Ingolstadt, is the county's country-best mark a product of pure luck? The automobile manufacturer is also a major source of commissions for Eichstätt's manufacturers and service providers.

As business development officer Georg Stark points out, there's a lot more to the

Eichstätt story than just Audi. The local business community actually has four other engines. In addition to automotive engineering, the community is heavy on technical and logistics services providers (a number of them located in InterPark, one of Germany's largest and most successful business parks), energy supply, the skilled trades and "green" tourism.

That the local economy is so variegated is thanks to concerted planning and implementation by the county government and local municipalities and corporations, stresses Stark.

For further information: [www.lra-ei.de](http://www.lra-ei.de)

# Oberpfaffenhofen:

**Germany's outer space center takes on inner space and ground-level safety**

Say "Oberpfaffenhofen" and outer space comes to mind. The southwestern Munich suburb is best known for being home to the German Space Operations Center, the country's Houston.

The GSOC, in turn, is one of the nine institutes maintained by Germany's Aerospace Agency in Oberpfaffenhofen. These institutes are world leaders in the development and operation of satellites and their communication and utilization systems.

It was this expertise which led to the basing of the pan-European Galileo ground control center in Oberpfaffenhofen. The center will coordinate the operations of the 30 satellites forming what will be the world's most advanced GPS grid.

In view of this choice it's not surprising that the institutions – and specifically the Institute for Communication and Navigation – in Oberpfaffenhofen are playing major roles in developing the revolutionary technologies comprised in the Galileo Advanced Applications (GAA) project.

GAA technologies will save lives – those of firefighters and other providers of rescue services making their ways through burning buildings, those of the people who they

are coming to rescue. GAA will do such by providing a 3D picture pinpointing the location of every single person in the buildings.

Police and security will use this pinpointing technology to track terrorists and other criminals.

GAA pinpointing technologies – in this case LARS (Landmine Archive and Retrieval System) – will put an end to one of the world's causes of death and mutilation: the landmines buried in the soil 200,000 square kilometers of 54 countries. Until LARS came along, there was no easy and safe way of detecting and destroying the mines. LARS melds radar and GPS signals to pinpoint (within two meters of actual location) the mines' positions. This positioning, in turn, enables the remote destruction of the mines.

Other innovations from Oberpfaffenhofen are enabling the world to get a grip on tsunamis and are giving manufacturers a hand.

Oberpfaffenhofen's Applied Remote Sensing Cluster is one of the world's leaders in the development and application of GMT (geo-monitoring technologies). These employ satellites and aircraft (including those

developed by and operated from Oberpfaffenhofen) in the detecting and detailing of other pressing dangers, including natural disasters and human-caused environmental damage and global warming. The Cluster's newest effort: to lead-manage the development of a key component of the German-Indonesian Tsunami Early Warning System, which is designed to prevent a repeat occurrence of December 2004's killing waves.

After coming up with one of the world's best selling IT appliances (the space mouse), the first robot in outer space (an ultra-capable "space arm" in the ROTEX experiment) and other advanced self-operating and remote controlled devices, Professor Gert Hirzinger and his team at the Institute of Robotics and Mechatronics (joined by a Chinese technology institute) recently created the SAH.

Because it is so small and so wonderfully dexterous, the "Schunk Anthropomorphic Hand" is going to revolutionize manufacturing. For that reason, SAH recently won a major European technology transfer award. Because SAH is so beautifully constructed, it also recently received an international design honor.

For further information on all these institutes and innovations: [www.dlr.de/oberpfaffenhofen](http://www.dlr.de/oberpfaffenhofen)

# A state of green entrepreneurs

**Bavarian businesspersons sweep top environmental prizes**

Bavarian businesspersons swept 2007's prestigious "Eco-manager of the year" prizes, award each year by the World Wildlife Fund and Capital business magazine.

Munich Re is the world's second largest reinsurer. As such, the company provides coverage against risks arising to insurers from hurricanes, tsunami and other natural disasters. Global warming is causing increases in the disasters' incidence and severity.

So CEO Nikolaus von Bomhard, the winner of the prize's large-sized companies category, has strong professional reasons for undertaking measures chronicling and changing

the practices leading to climate change. Von Bomhard's measures have an overriding objective: to have his giant company – 35,000 staff members working in 50 countries – operating CO2-neutrally by 2012.

As the panel conferring the prizes pointed out, von Bomhard's commitment to combating climate change is also, however, personal in nature. It stems from his deeply-felt sense of responsibility to the planet and the generations which will inhabit it in the centuries to come.

As reported in the September 2007 issue of Bavaria in the News, Bionade tastes great, is great for you – and for the environment. No wonder the beverage is sweeping the

world. And no wonder Peter Kowalsky, CEO of the Ostheim, Bavaria-based Bionade GmbH, was one of the two winners of the environmental prize's SME (small and medium-sized enterprises) category.

Want to make your office environmentally friendly? Then start ordering from Memo AG, headquartered in the northwestern Bavarian town of Greußenheim, and the supplier of a complete – from stationery to lamp bulbs to furniture – range of environmentally-friendly, stylish and affordable. The products' traits have made Memo AG one of Germany's fastest-growing green companies and won founder and CEO the other SME eco-manager of the year prize.

## UNESCO's Heritage of Humanity sites in Bavaria

They are the bequests of nature and human endeavor: UNESCO's Heritage of Humanity sites. Regensburg's medieval center is the fifth of these sites in Bavaria.

### Würzburg's palace and royal gardens

Between 1720 and 1780, a number of Europe's most accomplished architects (including the renowned Balthasar Neumann), artists (Venice's Tiepolo) and artisans (stucco master Antonio Bossi) were summoned to this northwestern Bavarian city to fulfill the ruling prelate's ambitious commitment: to create the Baroque era's defining masterpiece.

### Church in the meadows

The interior of this 18<sup>th</sup> century rococo masterpiece, which is located near the upper Bavarian town of Steingaden, seems to defy the rules of physics. The soaring profusion of paintings, carvings, sculpture and stuccowork inside the church is counterpointed by low-key, pristine harmony of the Alpine meadows around it.

### Bamberg's medieval center

In 1007, Holy Roman Emperor Heinrich II decided to turn this central Franconian city into the new Rome. His decision launched an eight century-long building spree. Its fruit are a medieval center of an astounding size, a pleasing diversity of structures and cityscape, and large number of bridges. They span the waterways making Bamberg's center into "Bavaria's Venice".

### The Limes

Like the Chinese, the Romans had a problem with marauding barbarians. And like the Chinese, the Romans came up with a very simple and very expensive and extensive solution: to build a mighty wall. Going by the name Limes, the Romans' wall stretched over 550 kilometers of southwestern Germany. In Bavaria, 25 museums and



Regensburg's Stone Bridge and Cathedral

excavation sights present the watchtowers, walls, gates and barracks forming the Limes.

### Regensburg's medieval center

Regensburg's riches came from the Danube, which was central Europe's prime artery of trade during the early Middle Ages. The riches accumulated by the city's trading houses were spent on building more than 900 palaces, mansions, and fortified towers – and on one, majestic Stone Bridge. In the late Middle Ages, trading routes shifted, causing Regensburg's economy to go into a centuries-long decline – and preserving this unique assemblage of early medieval architecture from modernization.

For further information: [www.unesco.de](http://www.unesco.de)

## Foundation stones

The Michigan-headquartered **Lear Corporation**, one of the world's leading automotive suppliers, just became the latest major international company to open an R&D facility in Bavaria. Lear's Premium Sound Laboratory will be opened in 2008 in the northern Bavarian town of Kronach. It will join Lear's Electronics Customer Service center, commissioned in 2007 in Munich.

**A direct rail freight link between Nuremberg and Beijing:** that's what rail authority Deutsche Bahn's €26 million relocation of its rail container transloading facility is expected to produce. The relocation moves the facility from downtown Nuremberg to the city's booming port, which is located on the Main-Danube canal. It, in turn, forms part of a waterway linking the North and Black Seas.

## Our representative in ...

**Hungary** is Gabriel A. Brennauer. Born in 1955, Mr. Brennauer has been in his present position since 2006. He is also CEO of the German-Hungarian Chamber of Commerce.

After earning a degree in business administration, Mr. Brennauer served as CEO of an Italian bridal fashion house. In 1991, he joined Roland Berger Strategy Consultants, for which he served as senior consultant in Brazil. From 1996 to 2006, he held senior positions at the German-Brazilian Chamber of Commerce.

## ... in Munich ...

### Analytica 2008

systems and services for laboratories and other venues and applications of technical analyses  
April 1 – 4, 2008

### Aerospace Testing Expo Europe

testing, assessment and quality control systems and services for the aerospace industry  
April 15 – 17, 2008

For further information:  
[www.messe-muenchen.de](http://www.messe-muenchen.de)

## ... and Nuremberg

### Sensor + Test

Sensors, measuring and test systems  
May 6 – 8, 2008

For further information:  
[www.nuernbergmesse.de](http://www.nuernbergmesse.de)

Trade fairs ...



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Prinzregentenstrasse 28 • D-80538 München, Germany

Tel.: (+49-89) 21 62-26 42 • Fax: (+49-89) 21 62-28 03

[www.invest-in-bavaria.com](http://www.invest-in-bavaria.com)

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to Bavaria in the News, please contact us:

[info@invest-in-bavaria.de](mailto:info@invest-in-bavaria.de)