

# DAVINCI

THE CUSTOMER MAGAZINE OF EISENMANN AG



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Hotter than ever

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Sustainability for today and tomorrow-  
Eisenmann's new-look booth

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*Dear readers, dear customers,*

*We are pleased to present you with the first issue of our new customer magazine, DaVinci.*

*Da Vinci was a painter, sculptor, architect, natural philosopher and anatomist – and also an engineer. He was a true all-rounder; a visionary with extraordinary knowledge on an astounding range of subjects. He analyzed, designed and planned a host of different projects and carried out many of them himself, too. As an engineer, Leonardo da Vinci was a pioneer who was far ahead of his time. He was driven by a vision of machines that would reduce the workload and increase productivity.*

*Our mission is to be your partner and to offer our customers this same kind of versatility. We provide the process skills to support you in achieving your goals efficiently.*

*Efficiency was also our focus at the recent IndustrialGreenTec trade show in Hanover. Incidentally, we were delighted to meet many of you there in person.*

*At our completely new-look booth we showcased pioneering approaches to energy and resource efficiency. We used a model to illustrate our green engineering solutions and show how they can be combined to complete the energy circle. We believe that our contribution to IndustrialGreenTec has raised awareness of these technologies within the industry. You will find impressions in this issue on page 14.*

*We would like this magazine to be a new channel of communication with you beyond our day-to-day working relationship: in two issues per year we will offer you an all-embracing perspective on Eisenmann's diverse activities. Our editorial team would welcome your feedback.*

*Happy reading,*

  
**Dr. Matthias von Krauland**  
 Chairman of the Executive Board

## More production facilities adopting solar thermal solutions



THE FIRST SOLAR THERMAL POWER STATION IN THE DESERTS OF THE UNITED ARAB EMIRATES IS CURRENTLY TAKING SHAPE AND IS SCHEDULED TO START OPERATIONS IN FALL 2012. IN CHINA, SOLAR THERMAL TECHNOLOGY HAS ALREADY BECOME THE PREFERRED OPTION TO HEAT WATER IN PRIVATE HOUSEHOLDS. HOWEVER, IT IS YET TO EMERGE AS A KEY SOURCE OF RENEWABLE ENERGY IN GERMANY. THAT COULD SOON CHANGE, THANKS TO THE TECHNOLOGY'S VERSATILITY AS A MEANS OF GENERATING PROCESS HEAT.

In conjunction with Ritter XL Solar, Eisenmann delivers solar thermal plants for large-scale projects, offering a way to maximize energy efficiency in production. This technology is becoming an increasingly attractive option for the automotive industry, in particular. Close to 70 percent of the total energy required to manufacture a car is swallowed up by surface finishing processes: generating process heat is one of the biggest energy sinks. The major advantage of solar thermal solutions is that solar circuits can be directly integrated into the process heat system. Leveraging evacuated tube technology, these solutions can generate temperatures of up to 130° C. In ideal radiation conditions, this provides up to 100 percent of the energy required for process heating.

### Storing thermal energy in processes

"We configure our customers' plants to make maximum use of the heat generated by solar thermal energy," says Markus Hachmöller. He gives customers specialist advice about process technology. "For example, a paint shop's dip tank can serve as an additional means of storing thermal energy. If it is intelligently managed, the heat generated can be used to prevent the tank from cooling too much outside operating hours. Harnessing the power of the sun alone can save the extra energy that would otherwise be needed at the start of production."

Integrating solar thermal technology also pays off for other production facilities requiring large amounts of process heat. Working closely with customers, Markus Hachmöller develops energy models for cooling, too: "in combination with excess process heat, solar thermal solutions are ideal for powering absorption chillers to cool production processes." That saves the electricity costs that would be incurred by conventional cooling.

Depending on the customer's location and process heat requirements, solar thermal integration can pay off in under ten

years – even faster in sunny countries. This does not take into account incentive programs offering subsidies of up to 30 percent of the investment value.

With a 23 percent share of the global market, German solar thermal technology manufacturers are second only to China. With joint-venture partner Linuo Paradigma, Ritter XL Solar is one of the global market leaders, thanks to an annual output that exceeds a million square meters of collector area.

### Evacuated tube technology

With the aid of a special mirror, known as a compound parabolic concentrator (CPC), the sun's rays are collected on the surface of the evacuated tube and converted into thermal energy, by means of a selective absorber coating. Evacuated tubes work like a thermos flask: the space between the inner and outer glass tube is evacuated, preventing the heat from escaping. This ensures that, even in weak sunshine or low temperatures, the system can still reach the required temperature of up to 130° C.

The key advantage of this technology is that pure water is used in the heat circuit, making a heat exchanger unnecessary. This lowers capital expenditure and increases overall efficiency to between 50 and 60 percent in relation to the usable solar energy. ■

### FACTS

Producing **700 kW of process heat** requires a **collector area of about 1,500 square meters**.

This depends on local radiation conditions and how the customer's demand for process heat fluctuates in the course of a day.

# Biomethane for Sweden's streets

ON AN IDYLIC SITE IN MÖRRUM, BETWEEN FOREST AND MEADOW AND A STONE'S THROW FROM SWEDEN'S SOUTH COAST AND THE BALTIC SEA, BÖBLINGEN-BASED PLANT ENGINEERING SPECIALIST EISENMANN IS BUILDING A BIO-GAS PLANT FOR WASTE UTILITY VÄSTBLEKINGE MILJÖ AB.

From late 2012, the plant will convert biowaste from the surrounding communities into biogas. This will then be upgraded to biomethane, an environmentally friendly and cost-effective alternative fuel for cars and trucks. Biomethane as a vehicle fuel is in high demand in Sweden. Being tax-free, it is significantly cheaper than gasoline and diesel, and producing it locally secures jobs and reduces the flow of money out of the region.

Västblekinge Miljö AB chose an Eisenmann biogas plant comprising standardized components. This option significantly cuts the time needed from design to construction and commissioning. An existing industrial composting plant will be integrated into the new end-to-end design, in order to produce biogas from biowaste, and then in the next stage, biomethane for filling stations. The Mörrum facility will process around 20,000 metric tons of biowaste from the surrounding area every year. That's the amount produced annually by approximately 200,000 households. Using this waste, the plant will produce around 1,500 metric tons of fuel – the quantity a fully-loaded car needs to travel around the earth about 730 times.

## Processing both solids and liquids

A specialized agitator ensures the plant is suitable for biowaste with a high solids content. For this project, Eisenmann will integrate two horizontal main digesters, each with a capacity of 800 cubic meters, into the system. They are heat-insulated, made from precast reinforced concrete components, and are equipped with horizontal agitators. The solids enter the digester via a feeder. At a temperature of 55° C, the feedstock is almost completely digested within 25 to 30 days, and potentially harmful pathogens are destroyed in the process. What's more, continuous agitation prevents the substrate from settling or rising to the surface.

## Reusing all waste

The dewatered solids produced in the biogas plant are used for composting. The major advantage of this digestate is that it produces significantly lower emissions than untreated biowaste during the composting process. The liquid digestate produced during biogas production is fed into a dedicated storage tank with a capacity of 4,000 cubic meters, where it is stored for up to 180 days. It can be used as liquid fertilizer for agriculture – an environmentally-friendly alternative to its chemical counterpart. In Sweden the production of electricity from biogas is not subsidized.

Instead, fuel from this source is tax free. This is why the biogas produced by digesters is upgraded to biomethane, compressed under high pressure, filled in gas cylinders, and sold to local filling stations.

**The plant will produce around 1,500 metric tons of fuel, from some 20,000 metric tons of biowaste.**



Biogas plant in Switzerland.

Photo: soi-E-Stalisse AG





*The heart of the biogas upgrading plant: membrane technology is a feasible option for upgrading biogas and a promising area for the future.*

**Tried-and-trusted plant technology guarantees process reliability**

Every component used in Eisenmann’s biogas plants was originally designed and engineered for industrial-scale plants, which makes for flexibility and process reliability. What’s more, an innovative and user-friendly control system with remote monitoring via the Internet enables operators to view all key data from the comfort of their own homes.

**Global demand continues to rise**

Eisenmann has been in the biogas plant market since 2003. In recent years, global demand has risen sharply. More than 80 plants with a variety of designs are in operation worldwide. As well as building facilities with standardized components, Eisenmann specializes in custom biogas plants for high solids digestion. These are tailored to the specific composition of the waste utilized and to the demands of the customer’s site. Eisenmann’s services

range from designing end-to-end facilities to integrating individual components into existing waste disposal systems. ■

**FACTS**

<b>Sweden:</b>	Kingdom, Member of the European Union
<b>Inhabitants:</b>	9,476,000 (in 2011)
<b>Major sources of energy:</b>	51% hydro power, 43% nuclear power
<b>Utilization of biogas:</b>	53% for heat generation 26% as fuel in biomethane vehicles (biomethane)
<b>Natural gas vehicles:</b>	32,000 (in 2010)
<b>Natural gas stations:</b>	155 (in 2010)

**Largest biogas plant in the world:**

In 2009, the world’s largest biogas plant was put on stream in Güstrow, Mecklenburg-Vorpommern. With an electrical power of 22 megawatts, the plant feeds 46 million cubic meters of biogas into the public gas distribution system – enough to supply a provincial town of about 50,000 inhabitants.



# A cut above **the rest**

THE PRIVATELY-OWNED SPENDRUPS BREWERY IN SOUTHERN SWEDEN MANUFACTURES A RANGE OF BEVERAGES, FROM WATER TO SOFT DRINKS, TO BEER. THE FACILITY PROCESSES, BOTTLES AND PACKAGES FOUR MILLION HECTO-LITERS ANNUALLY. THIS REPRESENTS A SIGNIFICANT LOGISTICAL CHALLENGE.

System Logistics Spa ordered our brand-new high-throughput electrified monorail system (EMS). The key design feature is two parallel conveyors: they can load or unload two pallets simultaneously or independently – which is where the name EMS Twin Shuttle comes from. System Logistics Spa is the prime contractor for the project, tasked with providing the equipment for Spendrups’ new logistics center.



*The Twin Shuttle maximizes throughput, while minimizing the required space. Plus, it offers new layout possibilities*

The EMS Twin Shuttle has been in operation at Spendrups in Grängesberg, about 230 km north-west of Stockholm, since early 2012. The system runs around the clock six or seven days a week, and its 800-meter track links the production department to the high-bay warehouse and the picking area.

The Twin Shuttle’s compact design, with two pallets on a single trolley, has enabled Spendrups to save a considerable amount of space. The transfer conveyors are placed close together so that they take up less room in the transfer zone, and a smaller area is required for buffering, empty trolleys and additional conveyor systems, too. Although the safety distance behind each loaded trolley is virtually the same as with a single-pallet system, the space only needs to be left after every second pallet. As a result, more trolleys can be deployed on the same length of track, substantially increasing capacity.

“Eisenmann listened closely to our customer’s wishes and designed a material flow system that can comfortably handle greater throughput,” explains Massimo Boldrini, project leader at System Logistics Spa. “Together we formed the perfect team. We’d like to thank them for a harmonious and enjoyable working relationship, and we wish Eisenmann every success for the future.” ■



**“COMPARED WITH SINGLE-PALLET SYSTEMS, OUR NEW EMS TWIN SHUTTLE CAN INCREASE THROUGHPUT BY UP TO 75 PERCENT – DEPENDING ON THE LAYOUT.”**

*Ralf Weiland,  
Senior Vice President, Conveyor Systems at  
Eisenmann Anlagenbau GmbH & Co. KG.*





## FACTS

<b>System:</b>	Overhead monorail
<b>Payload:</b>	up to 2,000 kg
<b>Speed:</b>	max. 120 meter/minute
<b>Throughput:</b>	760 pallets/hour
<b>Sample applications:</b>	beverage logistics, intralogistics, package & postal, catering, production

### History of the monorail system

English engineer Henry Robinson Palmer filed a patent for his monorail system in 1821. In those days, the hanging containers were pulled by horses.

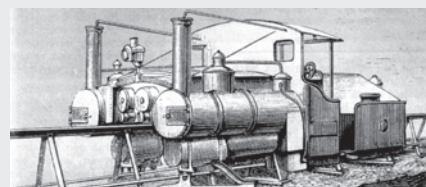
His invention is seen as the precursor to the first electrified monorail system designed by the French engineer Lartigue, and the aerial tramway in Wuppertal. Construction on the Wuppertal monorail started in the summer of 1898 and by December, the first test run had already taken place.

On October 24, 1900, Emperor Wilhelm II traveled with this new mode of transport from Döppersberg (downtown Ebersberg) to Vohwinkel. Today, the Wuppertal tramway is the town's landmark and was declared a historic monument in 1997. The monorail system is also widely used in underground mining because it does not require a flat surface in the tunnel. These powerful overhead monorails transport heavy weights to places a train cannot access.

*Eisenmann's electrified monorail system has become indispensable for many customers around the globe, from the furniture industry to food production, and wholesaling to ceramic manufacturing.*



*Sketch of Henry Palmer's monorail system, 1833.*



*A Lartigue-type monorail locomotive.*



*Still operating today: aerial tramway in Wuppertal over a length of 13.3 kilometers.*

## The beginnings of the build-operate-transfer model

YOU HAVE BOUGHT A NEW COMPUTER, YOU PLUG IT IN, AND AWAY YOU GO. BUT THE NEW HARDWARE AND SOFTWARE WORK IN A COMPLETELY DIFFERENT WAY TO WHAT YOU ARE USED TO, AND YOU LOOK FOR QUICK AND EFFICIENT ASSISTANCE. IN THE BOX YOU FIND A LEAFLET EXPLAINING THAT YOU CAN PURCHASE A SERVICE PACKAGE TAILORED TO YOUR SPECIFIC NEEDS. YOU CAN EITHER CHOOSE THE STANDARD OFFERING, OR SPEND MORE AND GO FOR IMMEDIATE, ROUND-THE-CLOCK SUPPORT, INCLUDING A COLLECTION SERVICE FOR THE EQUIPMENT, WHERE NECESSARY.

The Eisenmann service portfolio is structured along the same lines, providing everything from regular plant maintenance and servicing to the full outsourcing of ongoing operations. Standard customer service provides replacement parts and on-site maintenance and servicing as requested. If the customer desires more intensive support, additional options are available: in line with requirements, we offer assistance with start-up, standby support services, process optimization and employee training. When a customer selects the full-service model, Eisenmann plans and carries out plant maintenance and servicing autonomously, and assumes responsibility for delivering maximum availability. This leaves the customer completely free to focus on its core competencies and processes.

### End-to-end outsourcing services

Around 20 years ago, Eisenmann started to offer an even higher level of service and signed its first build-operate-transfer contract. In 1994 Volkswagen was faced with a challenge: its subsidiary SEAT needed to be restructured and put back on a profitable footing. One task was to establish and operate cost-efficient paint lines. The key criteria were low investment, rapid action, and the ability to perform conversion work without additional in-house staff. SEAT therefore sought a partner who met these requirements. And Eisenmann stepped into the breach.

To keep investment costs as low as possible for the production of the SEAT Inca, sections of an existing paint shop were removed and relocated from the Zona Franca to Martorell near Barcelona. Legacy equipment was complemented by new systems to create a fully functional paint line.

**“Thanks to the build-operate-transfer model, we are able to join forces to achieve highly positive and mutually beneficial results.”**



### Hand-in-glove with the customer

“We didn’t develop the build-operate-transfer model as a product as such, but as a solution for the customer,” explains Friedrich von Itzenplitz, Head of Fullservice and BOT. “The model’s value-added lies in the opportunity to demonstrate our skills and establish ourselves as an on-site partner to the customer.” The service team works hand-in-glove with the customer and builds relationships of trust with contacts at all key interfaces within the company. “This way, we contribute a huge amount of expertise to the company that outsources its processes to us. But it is a two-way street: we also benefit a great deal through experiencing our plants in action on a day-to-day basis, which means our design team gains valuable insight. For example, we can see what works well and also where there is room for improvement. And: we get to know the ins and outs of our customer’s processes and workflows, and acquire a deep understanding of their requirements.”

Against this background, Eisenmann took the decision, following the first project, to conclude further build-operate-transfer





contracts. The next assignment, in 1996, was a paint shop in Brazil for VW's commercial vehicles. When its partnership with Ford came to an end, VW was left without its own plant and was forced to build a new production facility for its trucks at short notice. On a green-field site in Resende, near Rio de Janeiro, Eisenmann built a brand new plant complete with paint shop in record time. Within a year it was up and running, and the plant engineering specialist has been responsible for operations from the start.

"The partnership between Randon Group and Eisenmann do Brasil has been a great success: the build-operate-transfer model has paid significant dividends to both parties," concludes Fernando Bortolini, production and quality manager at Randon S/A Implementos e Participações. "Being able to rely completely on the skills of a specialist in surface finishing – and this is the most critical stage of our production process – enables us to focus entirely on our own core competencies. Eisenmann delivers state-of-the-art equipment for our paint shop, continuously makes improvements, and keeps it up to date without disrupting operations. In addition to superior technology, which gives us a competitive edge, we have peace of mind thanks to a collaborative partnership based on trust and fairness. It is a classic win-win relationship that can only grow stronger over the years."

The beginnings of the build-operate-transfer model date back to a time when outsourcing first evolved as an approach to solution delivery and then as a benchmark for the efficient organization of production processes. This model, which takes service quality to a whole new level, has remained integral to Eisenmann's service portfolio to this day. The build-operate-transfer model currently features in six projects worldwide. ■

## FACTS

### 'Build-operate-transfer' success stories

<b>Carese, Brasil</b>	Paint shop for driving cabs, VW do Brasil
<b>Endosul, Brasil</b>	Paint shop for truck components, Mastertech
<b>CSG, Belgium</b>	Operation and maintenance of the electrified monorail system linking the supplier area to Ford's final assembly plant in Genk
<b>CSK, Germany</b>	Operation and maintenance of the assembly line and linking of the supplier park to Ford's final assembly plant in Cologne



# “The world is hungry,” for affordable carbon fiber”

INTERVIEW WITH MARKUS BALZER,  
HEAD OF CARBON FIBER & PROCESS TECHNOLOGY BUSINESS SEGMENT

1,221 MILLION METRIC TONS: WORLDWIDE CONSUMPTION OF STEEL IN 2009  
29,7 MILLION METRIC TONS: WORLDWIDE CONSUMPTION OF ALUMINUM IN 2009  
5,5 MILLION METRIC TONS: WORLDWIDE CONSUMPTION OF CARBON FIBER IN 2009  
BETWEEN 2009 AND 2011, THE GLOBAL DEMAND FOR CARBON FIBER INCREASED BY 50%





**DAVINCI:** *In 2011, Eisenmann acquired carbonization specialist Ruhstrat. What lies behind the company's efforts to expand carbon fiber manufacturing capacity?*

**Markus Balzer:** About four years ago, as part of a shift in strategy, we identified carbon fiber production as a new market opportunity for Eisenmann. Thanks to our oxidation ovens and exhaust air purification systems, we already have skills in two key processes in carbon fiber manufacturing. To round out our portfolio and to offer an end-to-end thermal manufacturing solution, we needed the third and final process. That is where Ruhstrat's carbonization furnaces come in. Our goal was to become a supplier of these low-temperature (LT) and high-temperature (HT) ovens for carbonization.

**DAVINCI:** *What are the strategic benefits of the partnership with Ruhstrat?*

**MB:** Our mid-term strategy is to be a turnkey provider for the carbonization process. And we have what it takes: in other words, the size and the infrastructure to tackle the management of large-scale projects. Previously, we were only in the position to supply oxidation ovens and air exhaust purification for the carbonization process; this meant we couldn't assume end-to-end

responsibility for projects. The acquisition has allowed us to take on the role of a turnkey supplier. Acquiring Ruhstrat ensured that we have the right carbonization furnace expertise. It also creates synergy with our High Temperature Technology Business Segment. The expanded customer base and Ruhstrat's existing reference projects are additional benefits.

**DAVINCI:** *How is the working relationship with Ruhstrat?*

**MB:** We have been collaborating with Ruhstrat in the area of sales for four years. Joint project activities have been going very well. We have always enjoyed a positive working relationship with a good exchange of ideas, and now we want to strengthen that even further. We hold regular meetings, where we agree strategy for joint projects, swap information on the status of current contracts and discuss other issues relating to carbon fiber.

**DAVINCI:** *What is Eisenmann's unique value proposition with regard to the value chain?*

**MB:** We are the only provider in the world to offer the complete thermal process: oxidation ovens, carbonization furnaces

and air exhaust purification systems. This translates into efficiencies for customers, because we are responsible for the end-to-end project management of all three production facilities, which are powered by a single integrated energy supply system. This reduces the number of interfaces and as a result, costs.

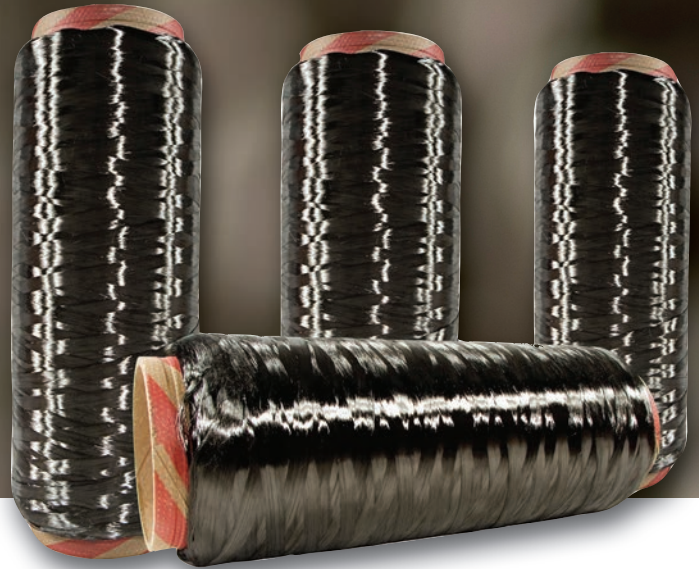
**DAVINCI:** *Where is the market currently heading?*

**MB:** The world is hungry for affordable carbon fiber. The aerospace industry was always the driving force. In this sector, there is an immediate gain for the use of carbon fiber for all stakeholders since lighter aircraft mean enormous fuel savings.

But the truly fascinating market is the manufacturing industry in general: the impetus comes from wind power, since renewables are on everyone's lips at the moment. The third largest potential for growth is in the automotive industry, where the use of components made from carbon fiber reinforced plastics is set to increase. We don't know yet to what extent, but growth rates could be astronomical.



“We believe that annual demand for carbon fiber will rise to **150,000 metric tons** by 2020”



**DAVINCI:** *What role does Eisenmann currently play in the carbon fiber industry?*

**MB:** We are the only provider of an end-to-end thermal process in carbon fiber production. Over the last few years, our marketing activities focused in part on increasing our visibility in this industry. Today, all carbon fiber manufacturers are aware of our offering. In particular, there has been a very positive response to our turnkey solution among the newcomers – many of them in China. But, we are also an attractive partner for established carbon fiber manufacturers, the “Big Eight” – thanks to our impressive plant designs. One of these manufacturers has already become a customer.

**DAVINCI:** *Where does Eisenmann see itself in five years?*

**MB:** We currently post on average some 20 million euros in sales annually. In five years, we expect to generate 50 million euros in sales. If the market develops as forecast, we should be able to manage this increase. While our current installed capacity is approximately 60,000 metric tons, we believe that annual demand for carbon fiber will rise to 150,000 metric tons by 2020.

**DAVINCI:** *How does Eisenmann plan to reach this goal and to what extent do you benefit from your expertise in process technology?*

**MB:** We are targeting both incumbent and new manufacturers in order to win a larger share of the market. This is not so easy for us, because many of our competitors already enjoy long-established partnerships stretching back several decades – and as far as the market is concerned we are still seen as a newcomer. But we bring 40 years’ experience in thermal process technology to the table, and fully understand the basic requirements of any plant. We can modify our process technology in line with the specific requirements of carbon fiber production. In addition, we are constantly improving and innovating. Four patent applications for oxidation ovens are proof positive of our expertise.

**DAVINCI:** *Almost 100 percent of Eisenmann’s business is outside Germany. How do you support customers on-site?*

**MB:** Our customers benefit from our worldwide sales and service network. Our customers expect to have a local contact. Our direct sales professionals are supported by local sales representatives,

who know the situation on the ground and can guarantee customer centricity. In conjunction with Ruhstrat, we are also establishing a key account structure that will enable us to better serve our customers and meet their specific needs.

**DAVINCI:** *Carbon fiber was previously seen as hazardous waste. A major challenge is the recycling of carbon fiber reinforced plastics. Will recycling be a key issue for Eisenmann in the future?*

**MB:** Yes, recycling is definitely a major challenge, and one we plan to tackle. Recycling carbon fibers involves a thermal process, which is well suited to our product portfolio. Moreover, energy-intensive carbon fiber production is something we are already addressing. Our patent applications, which I have already mentioned, focus on energy-efficient designs.

**DAVINCI:** *What are some of the future issues with regard to carbon fiber?*

**MB:** Today, most carbon fibers are manufactured from polyacrylonitrile, which is made from oil and therefore directly linked to the oil price. What is more, the manufacturing and transformation process is extremely energy-intensive



and this, in turn, has an adverse effect on the carbon footprint. That is why the market is looking for alternatives that would eliminate polyacrylonitrile as the precursor material for carbon fiber. We are monitoring these developments very closely, so that we are always in a position to modify our production systems quickly and flexibly.

**DAVINCI:** *Thank you for this interview, Mr. Balzer.* ■

## FACTS



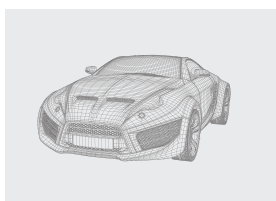
A **carbon fiber disk brake** reduces the speed of a formula one racing car from 350 to 80 kilometers per hour in only three and a half seconds. The braking power is five times as strong as that of a regular car.



Mario Gomez' **soccer shoes** have an embedded carbon fiber plate to optimize the distribution of pressure, responsiveness and flexibility.



Today's high-end **mountain and street bikes** not only have carbon-fiber frames – their other components such as cranks, wheels, handle bars, seat posts, etc. are also made of this material..



A **car body** made of carbon fiber weighs 50 percent less than steel and 28 percent less than its aluminum alternative.



**Airplanes** made of carbon fiber use 20 percent less kerosene compared to airplanes made of aluminium. Recent examples are the vertical fin of the airbus A380 and the body of the Boeing 787.

# IndustrialGreenTec



Photo: Messebau Keck GmbH

AFTER AN EIGHT-YEAR INTERLUDE, EISENMANN WAS BACK IN FULL FORM AT THIS YEAR'S HANOVER FAIR FROM APRIL 23 TO 27, 2012. UNVEILING A NEW LOOK AND FEEL, THE COMPANY SHOWCASED ITS GREEN ENGINEERING PORTFOLIO FOR ENERGY AND RESOURCE-EFFICIENT PRODUCTION AND WASTE MANAGEMENT. THE INTERACTIVE MODEL ILLUSTRATES THE SIGNIFICANCE OF GREEN ENGINEERING, DEMONSTRATING THE CLOSE LINKS BETWEEN INDUSTRIAL PROCESSES. FOR INSTANCE, IT SHOWS HOW WASTE FROM PRODUCTION PROCESSES CAN BE USED TO GENERATE POWER AND COMPLETE THE ENERGY CYCLE. DR. MATTHIAS VON KRAULAND, CHAIRMAN OF THE EXECUTIVE BOARD, OFFERS HIS VIEW ON THE SIGNIFICANCE OF SUSTAINABLE PRODUCTION IN THE PROTECTION OF RESOURCES (EXTRACT FROM THE INSERT ON THE INDUSTRIALGREENTEC TRADE SHOW IN THE FRANKFURTER ALLGEMEINE ZEITUNG, APRIL 17, 2012):

“Since the first Conference on Environment and Development in Rio de Janeiro in 1992, the development of environmental technologies has ignited an incredible dynamic. Since then, holistic solutions comprising the entire product life cycle have come to the fore. When the legislative authority introduced the disposal obligation in 1962, environmentalism was

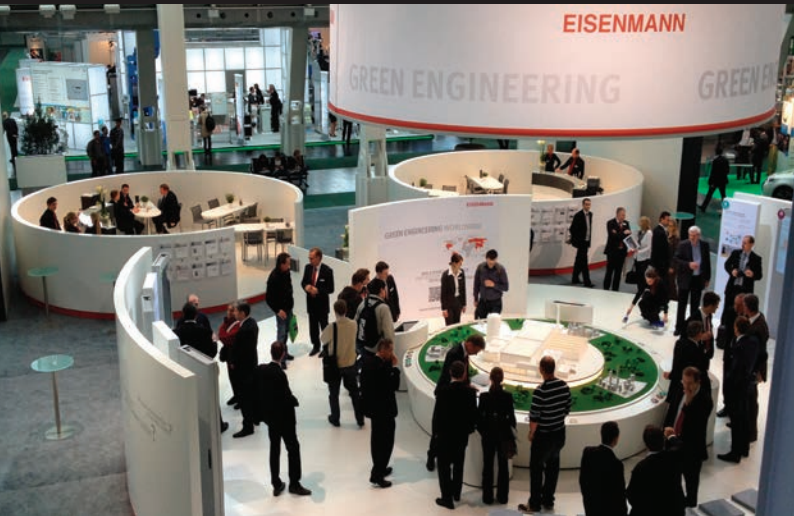
still unknown to the public. However, a few visionary entrepreneurs already saw the signs of the times, the year the Beatles had performed their very first show in Hamburg. In the decades to follow, the industry demand for recycling and reusing waste materials, exhaust air treatment, waste-to-energy and biogas – to name a few – has increased rapidly.

Over the past years, the industry has integrated environmental protection measures into its manufacturing processes and has achieved remarkable results. Now, numerous technologies and processes build on these results spanning the entire product life cycle ... .”



The E|Shuttle with the body of the VW UP! was a true eye-catcher and drew big crowds in Hall 26.





Left: a glimpse of the newly designed booth – a centrally arranged communication zone invites the visitor to delve deeper into various topics or to take a break in one of the two catering zones.

Below: Winfried Kretschmann (right), Minister-President of the State of Baden-Württemberg, and Harald Braun (left), State Secretary of the German Federal Foreign Office, learn about Eisenmann's innovations.



Photo: Messebau Keck GmbH



Left: Dr. Kersten Christoph Link and Dr. Thomas Beck receive a visit from Günther Oettinger, EU Commissioner for Energy.

Left: Reinhard Bütikofer, Member of the European Parliament and spokesperson of the European parliamentary group GRÜNE, visited Eisenmann to keep up to speed on renewable energy, energy-efficiency and green engineering.





Top: the interactive model illustrates the close link between various industrial plants, for instance how can waste accumulated during the production process be used to generate power and to complete the energy cycle.



Right: a model of a biogas plant within the interactive model. Visitors were able to access basic information on relevant technologies via theme disks and an integrated touchscreen.



Top: additional monitors and graphics displays provided access to in-depth information.





*Top: a European perspective – visit by EU Commissioner Connie Hedegaard.*



Returning to Hanover for the Industrial-GreenTec trade show was like coming home: Eisenmann has a long track of record in environmental technologies. The company recognized the importance of resource-efficient systems way back in 1962, developing a facility for treating the waste water from painting processes.

In 1968, a system for waste air purification followed. In 1982, Eisenmann built the first waste-to-energy plant, followed by innovations such as regenerative thermal oxidation (1989), thermal waste air purification via the adsorption wheel (1990) and a biogas plant (2003) to comply with increasingly strict laws aiming to protect our environment.

The industry has seen some impressive achievements over the past years – thanks to the integration of protective measures into the manufacturing process. ■

**"Sustainability  
is in our system."**



## Comic-book artist or mechatronics engineer?



THIS YEAR, EISENMANN PARTICIPATED IN THE FORWARD-LOOKING GERMAN GIRLS' DAYS INITIATIVE FOR THE NINTH TIME. 20 EIGHTH-GRADE PUPILS FROM LOCAL SCHOOLS WORKED WITH EISENMANN TRAINEES TO DEVELOP THEIR OWN PRODUCT – FROM CAD DESIGN TO MECHANICS AND ELECTRONICS. THE GOAL OF GIRLS' DAY IS TO ATTRACT GIRLS TO CAREERS IN TECHNOLOGY AND AWAKEN THEIR INTEREST IN THIS DYNAMIC FIELD.

By completing practical tasks, the girls discovered just how exciting working as a technical product designer, an electrical engineer for automation technology or a mechatronics engineer can be. 13-year-old Elena, a pupil at Stiftsgymnasium school in Sindelfingen, thoroughly enjoyed the experience, remarking: "I'm more of an artistic person really, and my dream is to illustrate comic books. But I was still interested in exploring careers in technology – and was surprised how much fun I had using the CAD program and soldering."

Other girls already knew exactly what they wanted, and were there to find out about potential future employers.

Natalie, a 14-year-old pupil at Realschule Goldberg, knows that she will choose a hands-on job or a career in technology after finishing school: "I made sure to register with Eisenmann for Girls' Day on the website. Now I have a much clearer idea of what a working day at the company would be like."

"Germany really needs more science and engineering graduates," explains Uli Metz, Head of Training and Development at Eisenmann. "We want Girls' Day to open up a broader spectrum of potential careers for young women, and as an employer, we're looking to attract applicants from groups that have previously been under-represented. Girls' Day is a forward-looking event, and we will continue to support this initiative – and the talented women of the future." ■



Award ceremony at the Hannover Messe: (from left to right) Dr. Claus Lang-Koetz (Innovation manager), Marc Peter Hofmann, Dr. Kersten Christoph Link (Member of Executive Board), Robert Leicht, David Suhm, Frank Tietze, Klaus Breuning (Customer Service), Berndt Fürstenberg (Senior Vice President Human Resources).

## And the winners are ...

THREE TALENTED UP-AND-COMERS AT EISENMANN WERE HONORED WITH THE 2012 EUGEN EISENMANN INNOVATION PRIZE AT THE INDUSTRIALGREENTEC TRADE SHOW IN HANOVER. THIS MARKED THE THIRD TIME THIS VERY SPECIAL AWARD HAD BEEN PRESENTED.

A total of 31 students who had written their Bachelor and Master's theses at Eisenmann in the previous year, were eligible to win the prize. The theses addressed a wide variety of topics from several business units. Key criteria included benefits to customers, innovativeness, market potential and contribution to energy conservation.

David Suhm was awarded first place for his Bachelor thesis "Development of a travelling device for measuring chain pull in track conveyor systems" and received a check for 2,000 euros. The device measures the forces acting on the chain of a Power&Free or chain conveyor system during operation. This provides a quick and easy way of checking for damage and worn components.

Robert Leicht and Frank Tietze shared second place and received 1,000 euros each in prize money. They wrote their Master's theses in the Environmental Technology and in Application & Robotics business units, respectively. No third prize was awarded.

"With this award, we are not only supporting our rising stars – we're also picking out ideas that we can put to use in our product development and processes," says Dr. Kersten Christoph Link, Member of Executive Board. ■

# In Dialog with the world

YOU CAN FIND OUT ABOUT OUR INNOVATIONS ALL ACROSS THE GLOBE. WE LOOK FORWARD TO YOUR VISIT.



**AMS Conference**  
Automobile production and painting  
September 3-4, 2012  
São Paulo, Brazil



**JEC AMERICAS**  
Composites  
November 7-9, 2012  
Boston, USA



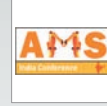
**SF China**  
Surface technology  
November 28-30, 2012  
Shanghai, China



**CHINA COMPOSITES**  
Composites  
September 5-7, 2012  
Shanghai, China



**ECOMONDO/KEYENERGY**  
Energy and environmental protection  
November 7-10, 2012  
Rimini, Italy



**AMS Conference**  
Automobile production and painting  
December 3-5, 2012  
Pune, India



**PROFINTECH**  
Surface technology  
September 10-14, 2012  
Brno, Czech Republic



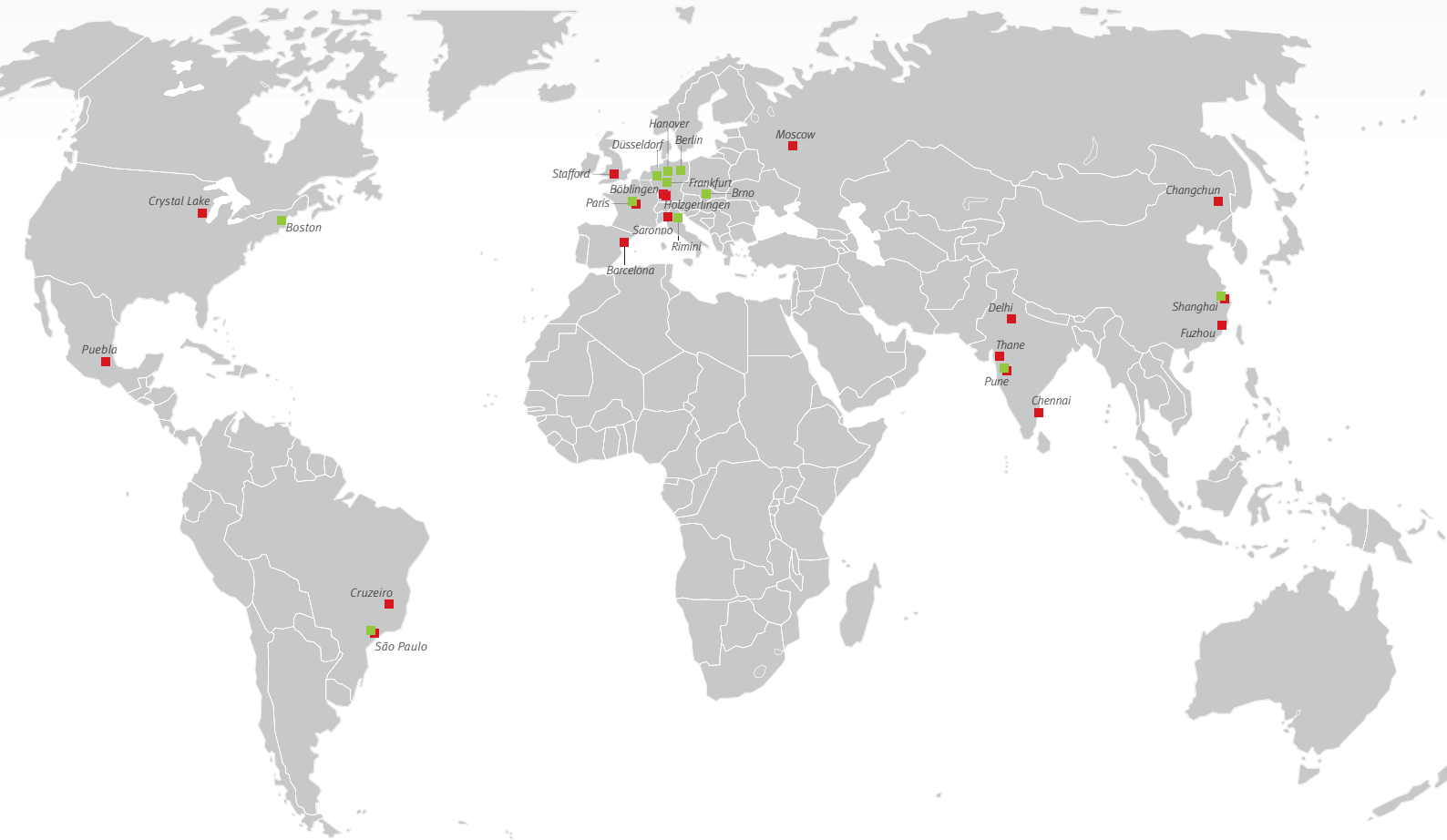
**BioEnergy**  
Energy supply  
November 13-16, 2012  
Hanover, Germany



**ALUMINIUM**  
The aluminum industry  
October 9-11, 2012  
Düsseldorf, Germany



**MANUTENTION**  
Handling and logistics systems  
November 19-22, 2012  
Paris, France



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