



E-MOTIVE

**Hybrid and electric drives
for vehicles and
mobile machines**

Hall 24, Stand B 22



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TECHNOLOGY FIRST
20.-24. APRIL 2009

hannovermesse.de

Engineering specialists agree: electric or electrified powertrains will become increasingly common in the vehicles and mobile machines of the future. The high power density, efficiency and flexibility of electric drives, the opportunities for energy recuperation, and above all the use of electricity from renewable sources – all these factors make this technology eminently suitable for powering vehicles and mobile machines in the years to come.

The E-MOTIVE initiative from the Power Transmission Research Association (FVA) – part of Germany's central engineering federation VDMA – is aimed both at fostering cooperation between vehicle manufacturers, component suppliers and manufacturers of industrial electric drives, and at exploiting synergies. The FVA is seen as the leading network for innovations in mechanical, electric and mechatronic power transmission technology. The foundations for tomorrow's innovations are laid in engineering study groups, with valuable input from industrial companies and leading scientists working on pre-competitive research projects.

The E-MOTIVE group presentation stand gives visiting professionals an opportunity to learn about the latest innovations from companies working in the field of electric drives for vehicles.



E-MOTIVE – A network-initiative of FVA

- Research and education
- Cooperation
- Forum for experts
- Fairs and exhibitions

FVA Facts – our Network

- 1.500 Experts of Industry, 300 academics
- Over 200 companies
- Ca. 50 research institutes

Monday, 20 April 2009

- 2 p.m.-2.30 p.m. **Drive technology for light electric vehicles**
Hannes Neupert, Extra Energy e. V.
- 2.30 p.m.-3 p.m. **A power boost from the power socket – mobility solutions using electric bikes and trikes**
Stefan Lippert, Alfred Hermann GmbH & Co.
- 3 p.m.-3.30 p.m. **An alternative manufacturing process for high-energy permanent magnets and technical applications**
Martin Krengel, Tridelta Magnetsysteme GmbH
- 3.30 p.m.-4 p.m. **Drive concept featuring an electric wheel hub motor**
Georg Mies, KlingelInberg GmbH
- 4 p.m.-4.30 p.m. **Range extender concept based on HATZ 2in1 technology**
Erich Eder, Motorenfabrik Hatz GmbH & Co. KG

Thursday, 23 April 2009

- 9.30 a.m.-10 a.m. **Innovative technology for the electric drive of tomorrow**
Gerd Kücken, Kienle+Spieß Stanz- und Druckgiesserei GmbH
- 10 a.m.-10.30 a.m. **Large-format lithium ion batteries for vehicle applications**
Norbert Grein, GAIA Akkumulatorenwerke GmbH
- 10.30 a.m.-11 a.m. **Cooling concepts for Li-ion batteries**
Christoph Fehrenbacher, Behr GmbH & Co. KG
- 11 a.m.-11.30 a.m. **Hybrid drives for industrial applications**
Rüdiger Schüller, Heinzmann GmbH & Co. KG
- 11.30 a.m.-12 noon **Technologies for the future – innovative drive technologies**
Maik Hennies, STILL GmbH

Friday, 24 April 2009

- 9.30 a.m.-10 a.m. **High-voltage plug-in system for hybrid and electric vehicles**
Dr. Thomas Schilla, Pfisterer Kontaktsysteme GmbH & Co. KG
- 10 a.m.-10.30 a.m. **Hybrid technology in forklifts – one concept, numerous possibilities**
Hannes Schöbel, Linde Material Handling GmbH
- 10.30 a.m.-11 a.m. **A coupling manufacturer's perspective on hybrid drives**
Dr. Peter Böhm, Stromag AG
- 11 a.m.-11.30 a.m. **The E Premium tractor – higher voltage in agricultural vehicles**
Dr. Eckhard Buning, John Deere Werke
- 11.30 a.m.-12 noon **A practical example of integrated hybrid drive modeling and simulation**
Uwe Schreiber, ITI GmbH

**Alfred Hermann GmbH & Co.
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Contact person: Bernd Hermann

For many years, the business of Hermann Blechtechnik has centered on the manufacture of complex sheet components from the prototype stage to small-scale series. Many customers know that, when it comes to tight delivery deadlines and complex formed parts, the sheet engineers from Schorndorf are the people to contact. For example, the company is manufacturing components for use in innovative hybrid technology. However, the company is also focusing increasingly on developments specially commissioned by customers.

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Contact persons: Roland Reichert, Cees Bonnema

Bal Seal Engineering is a customer-oriented company that develops and manufactures technical solutions. We establish development partnerships with innovative customers and also open up global OEM growth markets. We employ the best and brightest from many different areas and cultures, and they bring a very diverse range of experiences and skills to bear in their work. We pride ourselves on our personalized, tailored approach to dealing with customer wishes and needs, and we always acquire or develop the technologies best suited to each individual set of requirements. Our branches and manufacturing sites in strategic locations worldwide all adhere to the very highest quality standards. Our growth is based on tapping into markets and forming strategic partnerships.

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Contact person: Christoph Fehrenbacher

Behr GmbH & Co. KG, based in Stuttgart, Germany, is a systems partner for the international automobile industry. A specialist in automotive air conditioning and engine cooling systems, the Behr Group is one of the world's leading manufacturers and suppliers of original equipment for passenger and commercial vehicles. Group sales in the 2007 business year came to around 3.4 billion euros. Currently, Behr employs at 17 development locations, 28 production sites and 12 joint ventures worldwide some 20,000 staff, of which 7,000 are employed in Germany.

Dipl.-Ing. W. Bender GmbH & Co. KG

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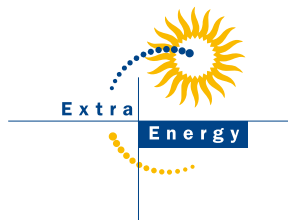


Contact person: Mr. Feigl

For more than 60 years Benders objective has been to provide solutions for safe and secure power supplies, especially where high levels of safety are important. Using the latest technology, BENDER offers measuring, monitoring and protective systems to monitor the electrical safety of machines and systems in order to provide an early warning before critical operating conditions result in damage to property and interruptions to operations involving considerable costs or before the life and health of people is endangered. Our products cover a wide range of applications extending from building services engineering, hospitals through all types of industrial applications and power supply and distribution to traffic engineering.

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Contact person: Sonja Glauert

ExtraEnergy is a non-profit association that promotes more widespread use of pedelecs and e-bikes. The association sees itself as a hub that links consumers, retailers, manufacturers, local government and companies with a strong social commitment. Founded in 1993 in Stuttgart by Hannes Neupert, the association now boasts numerous partners in China, France, Italy, Japan, Korea, Taiwan and the U.S. that regularly report on their respective markets. Having originally concentrated on pedelecs (pedal electric cycles) and e-bikes, ExtraEnergy has now expanded its operations to include light electric vehicles, which also have a role to play in creating a healthier transport culture.

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Contact person: Norbert Grein

The GAIA Akkumulatorenwerke GmbH develops, produces and distributes energy storage systems based on lithium ion technology for over 10 years. Equipped complete with a Battery Management System, GAIA batteries are now used in the following industries:

- Automotive / transport
- Stationary energy storage
- Regenerative energy storage
- Military / security
- Back-up power

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HEINZMANN is one of the world's leading companies for the development, manufacture and global distribution of electronic speed control systems for industrial applications. Its Electric Drives section develops and manufactures various drive systems based on disk motors and hub wheel motors, in addition to hybrid drives for use in industrial environments.

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ITI GmbH is one of the leading international companies in the field of virtual system engineering. SimulationX software is used worldwide by engineers and scientists representing more than 600 high-profile industrial customers, and for research and teaching in the academic sector. The company focuses on drive and automotive technology, fluid and energy technology, and mechanical engineering. Further information is available at www.iti.de.

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For 36 years, the John Deere Werke Mannheim has been Germany's largest manufacturer and exporter of agricultural tractors. Around two thirds of all tractors exported from Germany in 2008 were manufactured in Mannheim.

As the successor to Heinrich Lanz AG, the John Deere Werke Mannheim has been continuing the tradition of tractor production at the Mannheim site since 1956. The product portfolio for the global market covers 45 different basic models ranging from 61 to 148 kW (80 – 203 hp). These are available in a variety of versions and with numerous equipment options. Around 90 % of the items produced are exported to over 80 countries across the globe.

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Today, Kienle + Spiess is one of the most important suppliers of punched and diecast parts for constructing electrical machines and generators.

Kienle + Spiess is constantly investing in technical know-how and innovative technologies. The company develops tailor-made complete solutions to meet the precise needs of its customers – this process includes everything from the initial calculations and concept development to technical checks on the finished components.

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Contact person: Dr. Andreas Bünthe

Based in Lahnau (Germany), the LTi group of companies employs a workforce of around 1,000 worldwide. LTi's key areas of expertise are drive technologies for automation, magnetic bearings, renewable energies and microsystems/sensor technology. At the E-MOTIVE stand, LTi will be presenting a customized solution from the field of mobile power that serves as an example of efficient hybrid and electric drive solutions.

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M+W Zander offers worldwide the overall lifecycle services for high-tech production plants and infrastructural facilities, including any complementary services and modernization engineering. Our clientele includes leading enterprises in the fields of electronics, photovoltaics, pharmaceuticals and chemicals industries, automotive and information technology as well as research institutions. In 2008 the M+W Zander Group achieved a sales volume of approx. Euro 1,7 Billion with about 4.500 employees.

At the E-Motive booth M+W Zander presents the modular factory concept for Lithium-ion battery manufacturing.

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The global Mahr Group is the world's third largest manufacturer of measuring and metering equipment, with a range which covers everything from callipers to optical devices for measuring 2D and 3D product geometry. Mahr technology is used in the automotive industry, for medical applications, in mechanical engineering, precision manufacturing, optics and R&D – in short, everywhere where there is a need to closely measure and monitor even the smallest of deviations in workpiece and product dimensions, shapes and surface characteristics. In virtually every area of the investment goods and manufacturing industries, Mahr innovations are paving the way for technological and business advancement.

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HATZ is a family-owned company that has built up a successful business manufacturing small-scale industrial diesel engines and engine components for the automotive industry. HATZ has its own branches in all the key markets in Germany and abroad. Finding solutions to customers' drive-related issues forms the very heart of the company's activities. HATZ was founded 129 years ago and has been building combustion engines for 105 years.

PFISTERER Kontaktsysteme GmbH & Co. KG**PFISTERER**

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PFISTERER specializes in contact systems for power supply networks. Our company has been setting the standards in energy technology for over 80 years and, for the last 10 years, our high-current connectors have been used to drive electric trains and for energy transmission in vehicles. With our own production sites on 3 continents and 18 sales offices worldwide, PFISTERER is never far away!

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The development of cutting-edge, energy efficient mobility concepts forms one of the key pillars of the research carried out by the Institute of Automotive Engineering (ika). The research focuses on optimizing the technologies of current vehicles and their components, and on developing future and alternative innovations. Working in cooperation with the Forschungsgesellschaft Kraftfahrzeugwesen mbH Aachen (fka), the Institute also offers industry-based development projects focusing on the chassis, bodywork, drive, electronics, acoustics and driver assistance.

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For over 20 years now, Schmidhauser has been engineering and marketing electrical drives (variable frequency drives and servomotors) for industrial and automotive applications.

Thanks to many years of experience in the field and the company's integration in the Lenze Group, Schmidhauser is successful in supplying advanced, rugged and cost-effective automotive drive solutions to customers around the world.

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STILL is the leading supplier in the field of intelligent intralogistics control. Intralogistics represents the entire flow of materials and information within a company. In addition to a wide range of vehicles, the company develops innovative services and material flow solutions. The speedy service and extensive service network ensure production processes are highly cost effective and safe. In Europe alone, more than 6,000 skilled employees work to fulfill the specific requirements of the company's customers.

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Contact person: Thomas Häseker

Stromag is the preferred engineering partner when it comes to mechanical drive technology solutions. We focus on drive technologies in the wind power, crane systems, diesel generator, electric motor, metal processing, transmission, off-road and service markets.

Some of the items under the spotlight at HANNOVER MESSE will include couplings and brakes for HYBRID drives and ECO couplings that are resistant to even high temperatures. Short installation and maintenance times are the hallmarks of disk brakes from Stromag France and spring applied brakes from Stromag Dessau, while the new generation of geared limit switches features optimized analog or digital position feedback systems.

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Drawing on its in-depth knowledge and many years of experience in the field of permanent magnets and magnetic systems, Tridelta Magnetsysteme GmbH (formerly Thyssen Edelstahlwerke) supplies its customers with solutions that meet their specific requirements in the field of magnetic applications.

In addition to single magnets, these solutions can also be delivered as magnetic systems in the form of assemblies and components. In an ongoing process of research and development, and in close co-operation with its customers, Tridelta's Magnetic Systems section plans and produces pioneering products that meet even the very highest of requirements.

Wittenstein AG

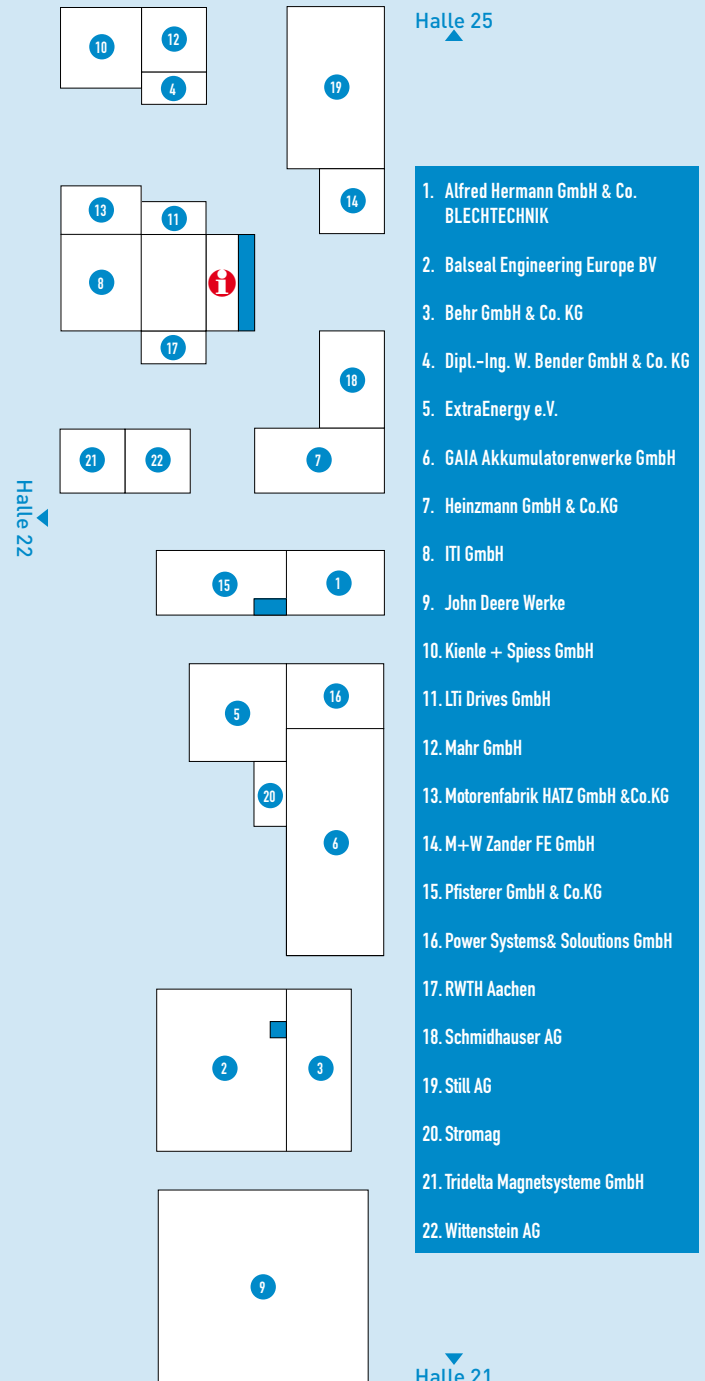
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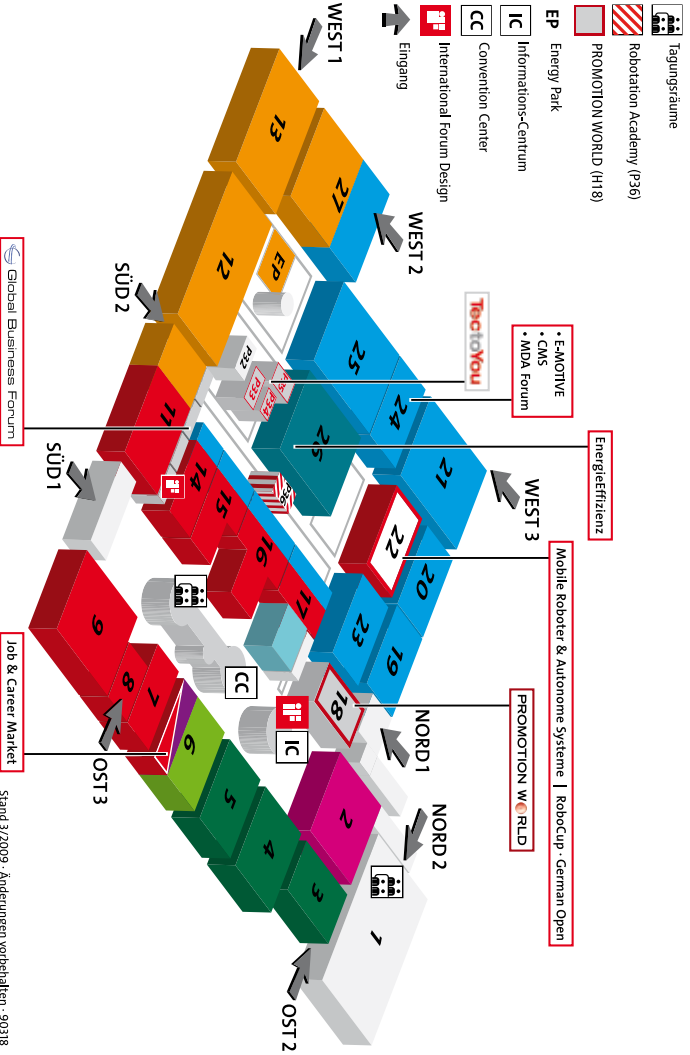
Drive technology from WITTENSTEIN is the no. 1 for designing complex, sophisticated drive systems for the car of the future.

In the future, the use of electric drives will shape the way cars are developed. This in turn demands that components demonstrate the very highest levels of power density and reliability.

Due to its many years of experience in developing drive systems for extreme conditions, WITTENSTEIN AG is the natural choice when it comes to designing and implementing such projects for the automotive industry.



Übersicht – Impressum



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