EN

Metalworking, Electrical and Mechanical Engineering

Brief Industrial Profile of the West Palatinate Region

ZukunftsRegion Westpfalz

Foreword

Dear readers,

Rhineland-Palatinate is a forward-looking industrial location with a business-friendly climate. We provide the critical hard and soft location factors, which are equally as attractive to companies, as they are to employees and investors.

With its position in the middle of Europe, right next to important sales markets, our federal state is attractive for SMEs, as well as for industry. Companies from many sectors collaborate very closely in many cases with scientific institutions. Nothing is too far away. On top of that, there is the family-friendly and pleasant surrounding area with a high quality of life.

The West Palatinate's position, bordering Germany, France and Benelux, with its international transport connections and a very good supply of skilled workers make the region attractive for many companies.

With a high density of universities, research institutes and scientific facilities in the relevant topic areas, the West Palatinate is a well-developed technological location .

The West Palatinate is eager to welcome you!

Dr. Volker Wissing
Minister for Economics, Transportation, Agriculture and Viticulture and Deputy Minister President of the State of Rhineland-Palatinate

The Federal State of Rhineland-Palatinate

Rhineland-Palatinate is situated in Germany´s dynamic southwest, in the immediate vicinity of France, Belgium and Luxembourg. It also boasts excellent connections for anyone wanting to develop worldwide business relationships, thanks to the neighbouring Rhine-Main area being the European economic centre that it is.

Position in Europe

Area:
19.854 km²

Inhabitants:
4.1 million

Important industry sectors:
· Chemistry and pharmacy
· Healthcare
· Automotive industry
· Metal processing
· Mechanical engineering
· Nutrition

An excellent business location ...

Rhineland-Palatinate has rapid transportation routes by land, by water and by air. This saves companies time and money. The proximity to the hub that is Frankfurt airport, efficient motorways, the European high-speed train network and the position on the Rhine, the most important waterway in Europe, all collectively form the backbone of an exceptionally well-connected transport system.

The innovative, overwhelmingly middle-sized economy cooperates closely with the sciences and is internationally in the lead. The combination of global players like BASF, Daimler, Schott and Boehringer Ingelheim with middle-sized world market leaders is unique.

The attractiveness of the federal state in terms of education is based on more than 40 research institutes and universities, as well as a first degree free-of charge. Both the university education and dual training system with well-educated specialists and master craftsmen are renowned worldwide.

And finally, a word on mentality: Rhineland-Palatinates are cosmopolitan, sincere and uncomplicated. Visitors appreciate the hospitality of the Rhineland-Palatinate; with its abundant culture and delights, it is a favourite holiday region for many people from near and far.

"Continuous economic growth, a high export quote, as well as exceptionally attractive housing and quality of life: With its healthy medium-scale economic structures, the Rhineland-Palatinate is one of Germany's leading business locations."

Daniela Schmitt
State Secretary of the Ministry for Economics, Transportation, Agriculture and Viticulture

... and a perfect environment for innovations.

The Rhineland-Palatinate offers world-class quality in particularly promising fields of business and science. Therefore, the state government focuses on the areas in which the competitive advantages are greatest and unique selling points are particularly pronounced. With a view to leveraging the opportunities that come from global mega trends, as well as the newest market-leading and technological developments.

The identified potential areas are consistently promoted, e.g. by:

- targeted strengthening and promotion of infrastructure and competence development in research and development,
- support for ambitious research and technology projects,
- creating the best starting conditions for innovative start-ups,
- ensuring access to new research for all companies, as well as
- the offer of research, innovation and technology promotion from a single source.

99,7

percent of all companies in the Rhineland-Palatinate are **medium-sized**. Thanks to their flexibility, they react quickly to global challenges.

7

Every seventh person employed in Rhineland-Palatinate works in a **high-tech** field. Because of this, the federal state is in national top position.

2

In the Germany-wide **satisfaction ranking of the founders,** Rhineland-Palatinate is in second place among the 16 federal states

57,6

percent **export quote** in Rhineland-Palatinate in 2018 (Germany 50.3 %)

The West Palatinate

The West Palatinate region is situated in the Southwest of Germany in the federal state of Rhineland-Palatinate. Besides the regional centre of Kaiserslautern, it includes the independent cities of Pirmasens and Zweibrücken, as well as the districts Kaiserslautern, Südwestpfalz, Kusel and Donnersberg. It borders France in the south, Saarland in the west, the Rhine-Main area in the northeast and the Rhine-Neckar metropolitan region to the east. In comparison to its neighbours, the West Palatinate region offers companies particularly attractive locations in terms of price and accessibility, favourable conditions for investors and for employees, employment in future-oriented industries and an environment with a high quality of life.

Traffic and accessibility

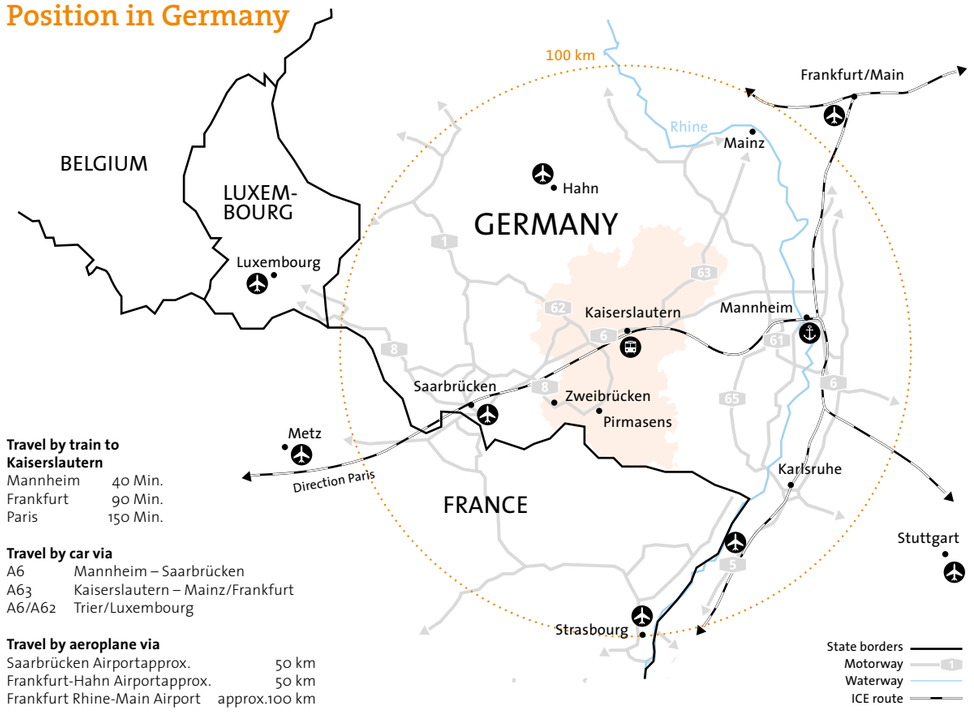
Whether on one of the numerous motorways that cross the region or the good local and long-distance rail connections, the West Palatinate can always be quickly and easily reached. Special feature: from Kaiserslautern, the metropolis of Paris is only about 150 minutes away by train. More importantly: the biggest German airport, the international hub Frankfurt/Main may be reached by car in under an hour. More regional airports in the area round out this enticing offer.

Labour market, population

In recent years, the number of employees subject to social security contributions has increased significantly to around 165,000 in 2018. At the same time, the number of unemployed people has continued to decrease. Due to demographic change, it was forecast that the Western Palatinate would experience a noticeable population decline in the coming years. In recent decades, however, especially in the centres, things have developed much more favourably than previously feared.

The official population statistics don't even include the some 50,000 Americans, who have been present in the Western Palatinate for 70 years, as well as members of NATO countries and their families. The US-American community is the largest outside the USA, which is reflected in a traditionally high level of English language proficiency among the local population. This presence, the large number of foreign students, foreign companies and their employees and the border with France with its numerous cross-border commuters all make the Western Palatinate an especially international region.

Position in Germany



Travel by train to Kaiserslautern

Mannheim	40 Min.
Frankfurt	90 Min.
Paris	150 Min.

Travel by car via

A6	Mannheim – Saarbrücken
A63	Kaiserslautern – Mainz/Frankfurt
A6/A62	Trier/Luxembourg

Travel by aeroplane via

Saarbrücken Airport	approx. 50 km
Frankfurt-Hahn Airport	approx. 50 km
Frankfurt Rhine-Main Airport	approx. 100 km

520.000

Around 520,000 **people** live in the West Palatinate overall. Practically though, it is closer to 570,000, because ...

50.000

Americans live in and around Kaiserslautern ("K-Town") as the biggest **American community** outside of the USA.

132

Citizens from 132 **various nations** live and work in West Palatinate.

8

international **airports** less than a two-hour drive away.

20.000.000

An estimated 20 million people live within a two-hour drive around the West **Palatinate.**

When it comes to complex research projects, people are increasingly turning to networks or so-called "clusters" in which cooperation partners from science and industry pool their different competencies. An example of this is the Science & Innovation Alliance Kaiserslautern (SIAK)

Research foci at the Technical University of Kaiserslautern include innovative vehicle and mobility concepts, intelligent driving and operating comfort systems, as well as energy-efficient vehicles and assistance systems, among others.

A dense network of first-class research facilities ensures that research and development work has practical relevance, providing the transfer points where results are put into practice.

The plastics industry based in the West Palatinate is an impressive example of the ongoing adaptability of our companies to changing conditions.

Economy and Technology

The West Palatinate has traditionally been rooted in industrial production. Machine and apparatus construction, automotive suppliers, footwear and leather goods, chemicals, plastics and last but not least, building materials still characterise the economic structure of the region to this day, which itself is strongly supported by SMEs. The US military is also a significant economic factor.

Based on its industrial roots, the West Palatinate's economy has developed in recent decades into a strongly export-oriented, SME-influenced research and development economy with innovative production and a specialisation in IT.

The conversion of formerly military and industrial areas or areas used by the railway has also played a special part in this transformation. There, with the support of the state, innovative new uses for these areas have emerged. The diversity of the economic structure together with the cooperation of the players in industry-specific networks has left the regional economy unscathed by international turbulence. Agriculture also avails itself of modern production methods, is partnered with modern agricultural machinery manufacturers (John Deere Development Centre), uses state-of-the-art IT technologies and also contributes to the generation of renewable energy in the West Palatinate.

Education, Research & Innovation

The competitiveness of the region is based on an innovative and flexible economy, but above all on a strong technological orientation in science, research and education. Several renowned research institutes in the field of information and communication technology are represented at the site, including two Fraunhofer Institutes, a Max Planck Institute and the German Research Centre for Artificial Intelligence (DFKI).

The Technical University and the University of Applied Sciences Kaiserslautern with its three locations in the region, as well as numerous vocational schools make the West Palatinate a priority region for training computer scientists, engineers and skilled workers in the Rhineland-Palatinate.

Technology transfer offices, patent information centres, the Science & Innovation Alliance, the Smart Factory, the SME 4.0 Competency Centre, etc. contribute to the integration of research institutions within the regional economy and help to ensure its competitiveness now and in the future.

21

The region boasts 21 **scientific institutions** in relation to automotive, electrical and production engineering, electro mobility materials, as well as IT / AI.

4.0

With the Smart Factory and the SME 4.0 Competency Centre, the West Palatinate is one of Germany's leading regions in **Industry 4.0.**

21.200

In 2018 there were around 14,900 students enrolled in more than 100 degree programs at **TU Kaiserslautern,** among those 2,650 were foreign students. A further 6,300 students were enrolled at the three locations of the **University of Applied Sciences, Kaiserslautern** in some 60 degree programs.

Metalworking, Electrical, and Mechanical Engineering

The importance of these industries in the West Palatinate

Tradition and innovation are closely intertwined in the metalworking, electrical-, and mechanical engineering sectors in the West Palatinate. Countless small and medium-sized companies combine to represent the entire spectrum of the value adding work chain. International business relationships and a high export quota bear witness to the importance awarded to the products of the West Palatinate by the global marketplace – a strong basis for further economic development in the entire region.

Well-trained specialists with many years of expertise in metal products and a diverse network of small and medium-sized companies and scientific institutes, plus the outstanding locational factors are the backbone of this field of competence.

The West Palatinate region's expertise in metalworking and mechanical engineering has a long history. The development of the metals industry started in the Middle Ages with iron production, and then gained momentum at the end of the 18th century. By the end of the 19th century, the Industrial Revolution had reached the West Palatinate. The production and processing of metals played a central role with production sites throughout the region. Ores rich in iron, water power, and wood from the forests provided ideal conditions for the rise of the industry tied to names like „von Hacke" and „Gienanth" (the so called „Krupps of the Palatinate"). Several machine manufacturing pioneers began operations in the region at the dawn of industrialization. In Zweibrücken, the Dinglerwerke grew to be an important equipment manufacturing company in the 19th century and still shapes the structure of the Zweibrücken business scene today with expertise in the field of turbines and cranes. At about the same time, in Kaiserslautern, sewing machine manufacturer Pfaff began supplying the growing textile industry and the shoe industry centered in Pirmasens, which needed special machines. The construction of the railroad, internationalization of the markets, and better accessibility to other sources of raw materials led to the decline of the iron industry, while machine manufacturing continued to grow in influence.

While some companies succumbed to global competition over the course of the centuries, many others have been able to excel even to this day. Simultaneously, new companies continue to spring up in the fields of metalworking, machine construction, and electrical engineering. Building on existing know-how, new fields of business activity have been created. Key to this positive development is an openness to change combined with continuous improvements in efficiency and quality, as well as having a good nose for new products and markets.

Today, the West Palatinate is host to a mature structure comprised of countless small and medium sized firms in the fields of metalworking, mechanical engineering, and electrical engineering. Many formerly independent „hidden champions" have been acquired by global corporations, while others have maintained their independence to this day. Many companies in the highly specialized trades and service providers supplement the industry structure and create strong clusters that continuously trade new impulses through an intensive interchange of scientific knowledge.

The establishment of the Kaiserslautern University of Technology and also the equally technical-oriented University of Applied Sciences at locations in Kaiserslautern, Zweibrücken, and Pirmasens in the 1970's has clearly contributed to this growth. The research capabilities, the diverse innovation impulses, and, especially, the highly qualified graduates form the basis for the broad acceptance of increasingly complex processes.

For years, TU Kaiserslautern has produced a steady stream of academic scholars in the areas of mechanical and process engineering, electrical and information systems, and computer science. The latter discipline, in particular, is gaining importance in view of the increasing digitalization of the economy. The University of Applied Sciences Kaiserslautern also graduates junior staff into the job market in the areas of mechanical and process engineering, mechatronics, electrical and information systems, and computer science, while also providing a dual education opportunity for highly skilled workers. The companies of West Palatinate are able to rely on a very good pool for recruiting junior staff.

A number of renowned institutes have been attracted by the TU Kaiserslautern, which through application-oriented research provide an important impulse for regional business. The Institute for Composite Materials (IVW) and the Smart Factory are worthy of note here. The former sets standards in the area of materials research with its focus on innovative composite materials. The German Research Center for Artificial Intelligence hosts the Smart Factory, which has pioneered the Industrie 4.0 concept for years – and is further supported by the federal states of Rhineland-Palatinate and Saarland with the establishment of the Mittelstand 4.0 (SME) Competence Center in Kaiserslautern. The Competence Center promotes the digital transition of the „Mittelstand" (SMEs) with information and consulting services. Also, the local expertise of two Fraunhofer-Institutes in the fields of software development and industrial mathematics benefits the research projects of participating companies.

The research capabilities are supplemented by three resident institutes, especially, in the area of materials testing: the Institute for Surface and Thin Film Analysis (IFOS), Photonik-Center Kaiserslautern, and the Test and Research Institute (PFI) in Pirmasens, originally founded to serve the needs of the footwear industry.

Last but not least, business start-ups by graduates from the universities and institutes always provide new impulses for growth. For example, Wipotec, the weighing systems specialist founded in 1988, has grown into a global company with over 1,000 employees. Even small, highly innovative specialists like PMB Bobertag or Robot Makers provide a fresh wind to ensure an ever-expanding base of expertise for the industry network. Together with companies that have been successful in the market for decades, like General Dynamics Land Systems (formerly Eisenwerke Kaiserslautern), Tadano Demag, TLT Turbo (both formerly Dingler facilities), Gienanth, Heger, and ACO Guss (formerly Guss and Armaturenwerk Kaiserslautern), Gebrüder Pfeiffer, and Pallmann, they represent the sound economic structure that also promotes a healthy growth environment for newcomer enterprises.

To further strengthen this positive development, the Ministry of Economics of the state of Rhineland-Palatinate advocated the establishment of RPTech, a technology and startup center, on the tradition-rich grounds of the former Pfaff Group in Kaiserslautern. Intended to increase the level of knowledge and technology transfer between science and industry, it will provide further support to a successful structural transformation.

Locations

- Industry Companies
- Vocational Schools, Universities, Institutes, Networks

No	Company	Competencies	Information
1	ACO Guss GmbH	Machine molded, continuous, and structural casting	www.aco-guss.com
2	Borg Warner Turbo Systems GmbH	Turbochargers	www.turbos.borgwarner.com
3	Buch Lackiertechnik GmbH	Paint, powder coating, pressure jet preparation	www.buch-lot.de
4	Bürstlein Gusstechnik GmbH	Precision casting	www.buerstlein-guss.de
5	Coherent Kaiserslautern GmbH	Industrial lasers	www.coherent.de
6	EAB Automation Solutions GmbH	Plant construction & industrial automation systems	www.eab-as.de
7	EMS Elektro Metall Schwanenmühle GmbH	Electrical connection systems	www.ems-power.com
8	Femeg GmbH & Co. KG	Compressor housings, etc.	www.femeg.com
9	G & M Systemtechnik GmbH	Pipe fabrication	www.gms-kl.de
10	Gebr. Pfeiffer SE	Material processing plants	www.gebr-pfeiffer.com
11	General Dynamics GmbH	Mobile bridging systems	www.gdels.com
12	Gienanth Group GmbH	Castings for vehicle and equipment construction	www.gienanth.com
13	Greiner Schaltanlagen GmbH	Busbars, switchgear	www.greiner.eu
14	Hager Group	Switch boxes and electrical wiring	www.hager.de
15	Heger Guss GmbH	Castings	www.hegerguss.de
16	HSP Steuerungs- und Anlagentechnik GmbH	Switching units, robot systems	www.hspgmbh.de
17	Huissel GmbH	Tools, parts, etc.	www.huissel.com
18	John Deere GmbH & Co.KG	Agricultural machines	www.deere.de
19	Klaus Backes GmbH	Parts for engines, automobiles, etc.	www.backesgmbh.de
20	Klaus Maschinenbau	Metalworking	www.klaus-maschinenbau.de
21	KLT Karosserie-Lackiertechnik GmbH	Body work and vehicle construction	www.kltgmbh.de
22	KSD Kransysteme GmbH	Construction crane manufacturing	www.ksd-kransysteme.de
23	Kubota Baumaschinen GmbH	Construction equipment, small excavators	www.kubota-baumaschinen.de
24	Körber Supply Chain Automation GmbH	Transport and palette systems	koerber-supplychain.com
25	LöSi® GmbH	Hydraulic components	www.loesi.de
26	Main-Metall Tribologie GmbH	Bearings and guide elements	www.main-metall.com
27	MEC Elektronische Komponenten GmbH	Electronic components	www.mec-elektronik.de
28	MiniTec GmbH & Co. KG	Profile, conveying technology	www.minitec.de
29	MKT Metall-Kunststoff-Technik GmbH & Co.KG	Mounting systems	www.mkt.de
30	Pallmann Maschinenfabrik	Size-reduction machines	www.pallmann.eu
31	PFAFF Industriesysteme und Maschinen GmbH	Industrial sewing machines	www.pfaff-industrial.com
32	PMB - Präzisionsmaschinenbau Bobertag GmbH	Precision balancing	www.pmb-bobertag.de
33	POLY-TOOLS bennewart GmbH	Blow molding construction tools	www.poly-tools-bennewart.de
34	Rail Maint GmbH	Rail vehicle component repair	www.qtec.gmbh
35	rema Fertigungstechnik GmbH	Machining systems, precision parts	www.rema-fertigung.de
36	Ring Maschinenbau GmbH	Perforating, punching, and embossing press machines	www.ring-group.com
37	Robot Makers GmbH	Machine control technologies	www.robotmakers.de
38	SKS Welding Systems GmbH	Custom welding machines / robots	www.sks-welding.com
39	Tadano Demag GmbH	Cranes	www.demagmobilecranes.com
40	TLT Turbo GmbH	Industrial fans, ventilation systems	www.tlt-turbo.com
41	Verope GmbH	Metalworking, special wire cable	www.verope.com
42	Vetron Typical	Industrial sewing machines	www.vetrontypical-europe.com
43	Walther-Werke	Plugs and sockets, power distributors, etc.	www.walther-werke.de
44	WESTA Fördertechnik GmbH	Conveyors, etc.	www.westa-web.de
45	Wipotec GmbH	Weighing systems	www.wipotec.com
46	Wolf Gruppe	Tool manufacture	www.wolf-gruppe.com
47	Xiton Photonics GmbH	High quality laser beam generators	www.xiton-photonics.com

Nr.	Universities, Institutes, Networks	Information
48	Kaiserslautern University of Applied Sciences	www.hs-kl.de
49	Institute for Surface and Thin Film Analysis (IFOS)	www.ifos.uni-kl.de
50	Institute for Composite Materials GmbH (IVW)	www.ivw.uni-kl.de
51	Test and Research Institute Pirmasens (PFI)	www.pfi-germany.de
52	Smart Factory KL	www.smartfactory.de
53	Kaiserslautern University of Technology	www.uni-kl.de

Nr.	Vocational Schools (BBS)		
54	VS I - Technik Kaiserslautern	58	VS Rodalben
55	VS Zweibrücken	59	Landgraf Ludwig secondary school plus Pirmasens
56	VS Kusel	60	Secondary school plus Lauterecken-Wolfstein
57	VS Landstuhl	61	Master Certification School

Companies in the metal working, electrical- and mechanical engineering sectors

ACO Guss GmbH | ACO Eurobar GmbH

Riding high technology to the top

Smelting, casting, milling, cutting, drilling, turning – ACO Guss has been shaping the industrial landscape of Kaiserslautern since 1898.

Founded as the „Guss- und Armaturenwerk Kaiserslautern," one hundred years ago, the company was recently taken over by the north German ACO Group. The merger welded the experience and long tradition of two successful companies – ACO activities on the premises of the Carlshütte foundry in Büdelsdorf go back four generations. In Kaiserslautern, proven competence in foundry operations has always been combined with the latest technology, and ACO Guss is not new to the list of the world's leading European foundries. „In addition to uncompromising quality standards, we want our products to satisfy our customers quickly, flexibly, and with development expertise," said Stefan Weber, Managing Director of ACO Guss and ACO Eurobar. Thanks to outstanding employees who live up to this challenge every day, ACO Eurobar, also in Kaiserslautern, develops quality continuous castings under the same name.

In the continuous casting process, cast iron is continuously produced in one strand from the liquid phase. The rapid cooling process then produces an extremely fine-grained structure with uniform hardness. The result features a high level of impermeability to liquids and gases. All required standards are monitored by a specially developed quality assurance system using the most modern test facilities and measuring methods. This is how ACO Eurobar ensures "quality castings that meet even the most stringent requirements of the industry," said Stefan Weber.

He also points out the company's machine mold casting activities. This is where the Kaiserslautern-based company develops and works out individual casting solutions that help establish the ACO Group's reputation as a global market leader. Of course, this includes the leading cast products from the ACO world to meet drainage, above-ground and underground structural engineering requirements. In addition, we produce technologically sophisticated, small and medium volume parts for our customers in the commercial vehicle, rail, and hydraulic industries as well as for machining. ACO Guss has an annual production of more than 60,000 tons of cast products with ACO Eurobar. As intelligent development partner and reliable supplier, ACO Guss strengthens the competitiveness of its customers in Germany and abroad.

Competencies:
Demand-oriented cast products for:
· Equipment and plant construction
· Rail systems, motor vehicles, and agricultural machines
· Pump and hydraulic industries
· Drive systems
· Infrastructure

Contact:
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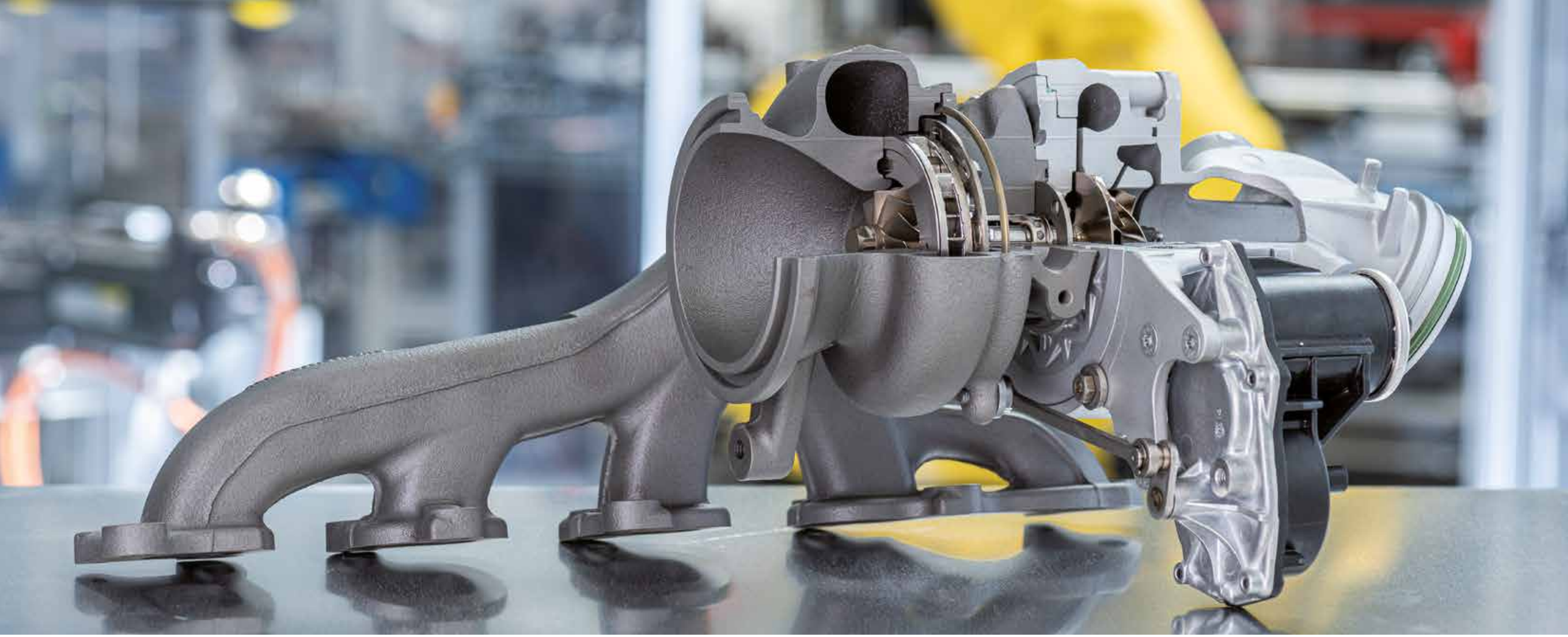
Am Gusswerk 8
67763 Kaiserslautern
Telephone: +49(0)631 2011–0
E-Mail: info@aco-guss.com
www.aco-guss.com



BorgWarner Turbo Systems GmbH

Turbo systems driving electrification

The West Palatinate in transition: One of the most important turbocharger plants of automotive supplier BorgWarner is focusing more and more on e-mobility.

Kirchheimbolanden is mentioned worldwide in the same breath with BorgWarner's Turbocharger business. The location is regarded as the control center for the development and production of the latest charging technologies. The company supports technology trends like hybrid cars and the clean engine concept with its efficient turbochargers. BorgWarner benefits from the transition in the automotive industry towards cleaner, lower emission mobility and is actively promoting it.

„Electric mobility is already a reality in Kirchheimbolanden," said plant manager Jürgen Adam. „For example, the eBooster®, an electrically powered compressor, is manufactured right here. Innovation like this helps us achieve our vision of a cleaner, more energy efficient world."

BorgWarner is one of the largest employers in the Donnersberg district. The company is aware of its social responsibility and, for example, is an active partner of the global charity SOS Children's Villages Our skilled employees and fundraising events support three local aid projects.

A variety of career models enables BorgWarner to recruit motivated people to the company and the region. In addition to training positions for production workers and lathe operators, BorgWarner also offers dual study courses in mechatronics, mechanical engineering, industrial engineering, and electrical engineering.

Competencies:
Ein umfassendes Angebot an Turboladern für PKW und Nutzfahrzeuge sowie ein großes Sortiment an Austausch-Turboladern und -Teilen für Aftermarket-Kunden in der ganzen Welt.

Contact:
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www.turbos.borgwarner.com




BUCH Lackiertechnik GmbH

Surfaces – protected & decorative

BUCH Lackiertechnik is your partner for industrial painting and powder coatings. We serve all your needs for corrosion protected and decorative surfaces. The company is primarily focused on ensuring top results through a combination of quality and efficiency.

Since its establishment in 2000, this family owned, medium-sized business has specialized in components of unusual sizes. At the conveniently located company headquarters on the Zweibrücken airfield, on more than 20,000 sqm2 of production and warehouse space, surfaces are finished and protected against corrosion using the wet painting process for industrial painting or in our automated powder coating facility.

BUCH completes the process chain of many regional and national customers in the automotive, construction & agricultural machinery, and equipment manufacturing sectors. We coat small parts and large lots in addition to large-format components for our industrial and trade customers as well as for our private customers. Services range from pre-treatments using sand blasting and performing any necessary improvements to high quality wet painting or powder coatings. Also, we provide ready-made and pre-installation of assemblies, professional packaging for onward transport, part storage, and inventory management. In addition to these numerous additional services, we also offer Delivery-on-Demand.

In essence, this means that components stored for the customer are only delivered when actually needed, depending on usage. The logistics chain is handled by the company's own vehicle fleet as well as local forwarding partners.

BUCH Lackiertechnik

Competencies:
· Processing of over-sized to small parts
· Industrial painting of individual and large lot parts
· Powder coating of individual and large lot parts
· DIN ISO 9001 certified
· Pre-assembly of unit components
· Delivery-on-demand logistics and storage

Contact:
BUCH Lackiertechnik GmbH
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Coherent Kaiserslautern GmbH

High-tech laser development and production at the heart of the West Palatinate

In Kaiserslautern, Coherent develops and produces high-tech ultrashort pulse lasers for various state of the art applications for a global customer base.

Coherent, Inc. was founded in 1966 and is one of the world's leading suppliers of lasers and laser-based industrial and scientific systems. Headquartered in the heart of Silicon Valley, California, with offices around the world, Coherent provides a unique product and service portfolio for scientific research, life sciences, microelectronics, and industrial materials processing.

Coherent differentiates itself from other laser manufacturers by offering the broadest product portfolio available on the market. Our extensive line of lasers, which vary in wavelength and output power, is fine enough for DNA analysis, precise enough for microelectronics, and strong enough to cut dense materials. From femtosecond pulses to continuous laser radiation, from a few mill watts to kilowatt output – we handle all customer requirements for the laser systems of today and tomorrow.

The company expanded in recent years through several acquisitions to nearly 5,000 employees with thousands of customers in more than 60 countries worldwide.

Our customers include well-known companies in various industries and numerous Nobel Prize winners.

Combined with our global sales and service as well as the depth of our application know-how, our solutions are used successfully worldwide.

We look forward to supporting you and your business!

COHERENT®

Competencies:
· Ultrashort pulse lasers
· UV optical systems
· High performance fiber lasers
· Solid state lasers
· Excimer, CO_2, and direct diode lasers,
· Laser sub-systems and turnkey solutions
· Laser measuring systems, and much more

Contact:
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EMS Elektro Metall Schwanenmühle GmbH

When the voltage rises …

EMS Elektro Metall Schwanenmühle – pooled engineering know-how and outstanding production competence in the field of high voltage systems.

The term high voltage system defines a broad spectrum. Centralized and distributed generation, distribution, and installation of electrical power supply systems are in our portfolio, which also includes renewable energy sources and the construction of distributed generation plants. The focus is on e-mobility, stationary storage units, co-generation units, wind parks, photovoltaic systems as well as grid compatibility and voltage quality.

In short: High voltage technologies are an innovative field of business activity for the future.

EMS Elektro Metall Schwanenmühle is located in the town of Horbach, in the southwest of the Palatinate. The Group has more than 400 employees applying their expertise and technical know-how to fulfill nearly every customer requirement. The hallmarks of our corporate culture at EMS Elektro Metall Schwanenmühle are flat hierarchies, good career prospects, and a strong team identity, in sum, a „we spirit."

Our range of activities includes e-mobility, switchgear, alternative energies, and stationary storage.

EMS Elektro Metall Schwanenmühle develops, manufactures, and distributes special electro-technical products such as expansion, flat and round strand cords as well as high voltage rail systems. Copper and aluminum are the main electrical conductor materials used in these products.

Competencies:
- Integrated solutions for electrical connection systems are our passion
- Reliability, quality, and sustainability are our standard
- For our customers, we are the first choice for a strategic partner
- Our company-wide commitment to value is the basis for an extraordinary team identity

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G & M Systemtechnik GmbH

Result-oriented metalworking

G&M Systemtechnik has more than 20 years of experience as an innovative partner in the field of modern home and building services as well as machine manufacturing. Together with our customers, we focus on the effective design and further development of the product.

A strong commitment to efficiency and the environment: much goes into contemporary heating and air conditioning systems, solar systems, and other technical components that consume energy, in particular, alternative energies.

G & M Systemtechnik is well-known since 1997 as a specialist in metals machining. Turning, milling, and forming are some of the production processes carried out by the CNC machines. The production engineering possibilities relative to pipe fabrication and machining have been successively expanded over time. Our in-house development team is continuously expanding the product portfolio.

Key engineering capabilities in the context of pipe machining are forming and bending. Emphasis is also placed on brazing processes. We machine and process stainless steel, brass, steel, and copper. G & M's extensive product portfolio ranges from complex individual parts to highly complex system units and, of course, the demanding quality requirements of equipment manufacturing are always satisfied andimplemented in the ready-to-install units manufactured, assembled, and tested for home and building systems.

Every project starts with an analytical consultation with the customer, followed by the appropriate development effort, which is then reflected in custom manufactured products. For our customers, G & M serves accordingly as a generalist: we are the consultant, service provider, and supplier in equal measure. This is possible with our strong team and results-oriented processes.

G & M has been based in the Kaiserslautern North Industrial Zone since 2008. Success is seen as a joint effort. All aspects of modern building services have been taken into account at the company facility. At G & M transparency and open communications, both internal and external, have top priority.

Competencies:
- Development and production of complex systems for residential and commercial buildings
- Fabrication of complicated individual parts and components
- Pipe fabrication and machining especially, forming, bending, and brazing

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Gebr. Pfeiffer SE

Gebr. Pfeiffer putting innovative technologies to work

Gebr. Pfeiffer is specialized in the planning, design, and manufacture of grinding plants for mineral-based loose materials like cement, coal, limestone, gypsum, and ceramics.

The company also sells equipment for the classification and drying of various other materials. Accordingly, it is mainly the building materials industry as well as the chemical and refractory industries that make up our global customer base.

Founded in 1864, Gebr. Pfeiffer currently employs around 500 people worldwide. The headquarters is in Germany along with its central production facility. Gebr. Pfeiffer also has subsidiaries in India, China, USA, Brazil, Malaysia, Russia, and Egypt creating a global network of experienced service partners that supply customers in all major world markets and is able to provide support throughout the entire product life cycle. As a technology leader, Gebr. Pfeiffer has installed more than 4,000 machines and plant systems in more than 100 countries worldwide.

Gebr. Pfeiffer supplies innovative, market-oriented systems as an integrated systems provider. With decades of experience and exceptional consulting expertise, we are well-equipped to design the perfect system for every customer requirement.

The result: one source that perfectly satisfies your requirements for customized integrated solutions.

Behind the success of this Palatinate enterprise are experienced employees who, with great commitment, consistently meet the demands of an international customer base. This implies constant development of new innovations, for example, multiple mill drives, gypsum-calcium mills, and mills for a maximum throughput rate. This successful company implements these innovations under the motto „Getting it done!“

Further guarantees of success are the vertical range of manufacture, the latest digital products, and the international focus at the Kaiserslautern based company. From the in-plant foundry, sheet metal machining systems, and mechanical assembly workshops, metal components weighing up to 100 tons are processed, assembled, and shipped all over the world.

GEBR. PFEIFFER

Competencies:
Machinery, Plants, Process engineering and digital solutions for grinding and preparation of loose materials such as cement, coal, limestone, gypsum, and ceramics

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General Dynamics European Land Systems–Bridge Systems GmbH

Tradition meets innovation

General Dynamics European Land Systems (GDELS) – Bridge Systems is one of the world's leading companies in the development, welding, and repair of complex aluminum structures and is specialized in the implementation of innovative products and systems in the areas of automotive engineering and mobile bridge systems. GDELS – Bridge Systems is recognized as one of the Top 100 most innovative medium-sized companies in Germany.

Innovation is part of the company's philosophy as is particularly evident in the following areas:

- Use of new and modern materials (plastic, metal, and fiber materials)
- Autonomous driving, in close cooperation with local enterprises and institutions, such as the Kaiserslautern University of Technology and Fraunhofer Institute
- Use of innovative manufacturing and joining methods
- High performance calculation software for continuous product optimization, in cooperation with Fraunhofer Institute
- DAkkS accredited and AZAV certified provider of training and certification courses for welders

The key strength of the company is its workforce. That is why GDELS Bridge Systems is committed to a diverse, motivated, and highly trained workforce.

As a responsible employer, GDELS Bridge Systems promotes the highest safety standards and occupational health practices to create a healthy work environment while focusing on sustainable activities through the careful use of resources.

Competencies:
- World market leader for mobile bridging equipment
- Specialized in the development, welding assembly and repair of complex aluminum structures
- Global service provider in the areas of automotive, welding technologies, electrics, hydraulics, and mechanics
- Contract manufacturing
- Training and certification of welders

GENERAL DYNAMICS
European Land Systems–Bridge Systems

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Gienanth Group GmbH

Leading global supplier of precision castings

Every step of the process – from the initial technical concept to the ready-to-install assembly – is based on state of the art metallurgic and technical expertise perfectly matched and tailored to the customer's needs.

The Group Headquarters and our largest production facility are located in Eisenberg/Palatinate. The associated and tradition-rich company Fronberg Guss is located in Schwandorf/Bavaria. Since 2018, the Group has included a further site in Steyr/Austria with an affiliated finishing shop in Kaplice, Czech Republic. The entire Group has about 1,300 employees.

In addition to its expertise in metallurgical development, the group of companies operates all production processes relative to iron – from manual to fully automated production on vertical and horizontal molding lines. The range of material specifications extends from gray cast iron to vermiculite-graphite to spheroidal castings, also offered in high silicate form. Our other core competencies include machining, surface finishing, and component assembly.

The portfolio includes machine-cast iron components of up to the 50 kilogram weight class for applications in infrastructure and mobility industries. In addition, our hand operated casting process can produce complex cast iron parts weighing up to 15 tons. These are used, for example, in equipment manufacturing or the energy production sector. Gienanth specializes in products for use in co-generation heat and power plants and emergency power aggregates, as well as in railroad and marine applications.

Centuries of experience and state-of-the-art technologies are the cornerstones for top quality and economic efficiency. Gienanth's unique innovative strength is recognized by many customers and confirmed by several independent institutes.

Competencies:
- High complexity iron castings
- Machine and hand formed castings
- Research and innovation
- Consulting and development
- Construction and simulation
- Finishing, coating, and pre-assembly

Gienanth

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Hager Group

We Shape the Future. With All Our Energy.

The Hager Group is a leading provider of solutions and services for electrotechnical installations in residential, industrial and commercial buildings.

The core business ranges from power distribution and wiring to intelligent building control and security technology. Together with customers from industry and the electrical trade, the company works on future topics such as charging stations for electromobility, as well as technologies for the intelligent home and better energy efficiency.

The development of intelligent energy management systems is one of the key research foci of the Hager Group. Electro-mobiles will be essential elements of this system in the future. Together with AUDI AG, the company is working on an automobile-home network, connecting electric car, charging technology, and house energy management.

At the Heltersberg site, around 580 employees develop and produce cable management and room connection systems. Apart from this, charging stations for electric vehicles are also manufactured here. The latest expansion to the production range are building communication technology products from Elcom.

Competencies:
· Energy distribution and meter mounting systems
· Protective and switching devices
· Cable management and room connection systems
· Switch programs and building control automation
· Security technology
· Charging stations for electric vehicles
· Communication systems and individual input settings

The Hager Group was founded in 1955 by Hermann and Dr. Oswald Hager together with their father Peter, and is still to this day an independent, owner-operated family business based in Blieskastel, Germany. The corporate form of a European Company (Societas Europaea, SE) underlines both the cultural diversity as well as the European roots of the Group.

Although, having said that, Hager Group has meanwhile become a global player: 11,500 employees generated sales of around 2 billion Euro (2018). In 22 sites around the world, components and solutions are produced, upon which customers from over 120 countries rely.

hagergroup

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HSP Steuerungs- und Anlagentechnik GmbH

Our focus is on your project

HSP Steuerungs- und Anlagentechnik has more than 25 years of experience in the development and manufacture of special equipment and assembly lines. We are a one source supplier – for everything from consulting to systems integration and services.

Design & fabrication of switchgear
In close cooperation with our customers, we prepare designs in the various areas of machine and plant construction. This includes the integrated planning of hardware and software as well as the assembly and commissioning of plant systems. We develop innovative and custom-made switchgear for your individual automation needs.

Special equipment & prototypes
The machines for many specialized areas of production cannot be purchased off the shelf. HSP manufactures special equipment and prototypes for international companies in the automotive and plastics industries. Our entire expertise and experience in the areas of engineering, switchgear construction, robot technologies, PLC programming and visualization all flow into the project planning, development, and commissioning.

Robot system technologies
To ensure independent, safe, and smooth workflows, not only the hardware but also the programs are decisive in the development of robot-based systems. We plan and deliver customized integrated systems, to include the design and production of suitable gripper technology.

Programming & software development
Programmable logic controllers are fundamental to modern industrial automation systems. Professional PLC solutions enable expanded and convenient functionalities for greater efficiency and safety in industrial automation systems. Special requirements in the field of industrial automation often call for a customized software solution. We program your custom applications.

Commissioning, maintenance & service worldwide
We also carry out the commissioning, and perform worldwide maintenance and repair. Always equipped with state of the art knowledge, our employees are prepared to assist our customers in all matters.

Competencies:
· Elektrokonstruktionen
· Schaltanlagenbau
· Sondermaschinenbau
· Robotertechnik
· SPS-Programmierung, Softwareentwicklung
· Visualisierungen
· Wartung & Service weltweit

HSP Steuerungs- und Anlagentechnik GmbH

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John Deere

Commitment to People who are Connected to the Countryside.

With a turnover of 37 billion US dollars and more than 74,000 employees, John Deere is the world's largest producer of machines for agricultural, construction and forestry work, as well as lawn and property maintenance.

The strength of our company arises from the intermingling of the various cultures, experiences and skills of our employees, as well as the common goal of reliably delivering the highest quality every day. At John Deere, we share a passionate interest in agricultural machinery and its advancement as a high-tech and high-innovation product. Your ideas, experiences and, above all, your humanitarian values are important to us.

John Deere employees are working on today's most important agricultural high-tech project – feeding the world's population.

At the site in Zweibrücken, you will find John Deere's European competence centre for harvesting machines. Here, around 1300 employees develop and build combine harvesters and self-propelled forage harvesters.

In 2010, we opened our European Technology and Innovation Centre in Kaiserslautern. In doing so, we benefit not only from the proximity to the important production sites in Zweibrücken and Mannheim, but also particularly from the research expertise at the Kaiserslautern site. Strategic partnerships with universities and institutes, for example, in the areas of sensor technology, automation and electrification, make Kaiserslautern one of the most important locations of our internationally-operating company.

JOHN DEERE

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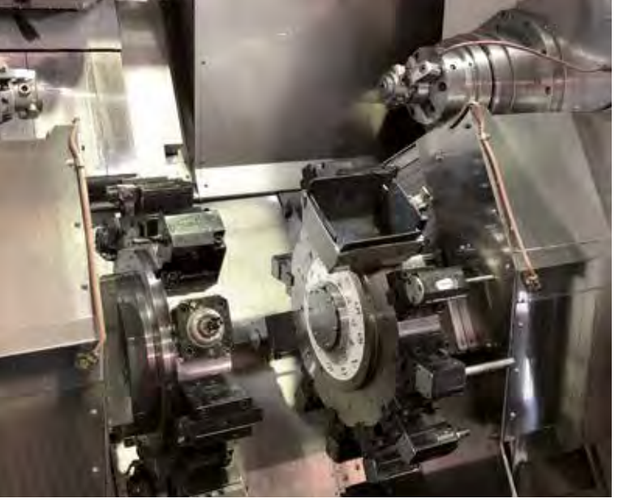

Klaus Backes GmbH

Precision, Flexibility & Reliability in Series and Piece Production

Back in 1974, when Klaus Backes began the contract manufacture of machine components and tools , customer satisfaction and meticulous precision were already top priorities.

This flexible response to customer requirements is still a central part of our company ethos. Our success speaks for itself: with more than 150 highly trained employees in our two plants, we produce precision turning, milling and grinding parts, die-cut and bent parts, tools, as well as precision mechanical assemblies in serial or single-component production.

Efficient work processes and modern business organisation are key to our more than competitive costs. Our employees are highly qualified and are regularly trained. This guarantees that they are familiar with the newest standards in technology. Because: we are no strangers to Industry 4.0.

An excellent staff is our most important future capital, so we attach great importance to training our own skilled workers regularly, thus creating the basis for highly trained staff.

Do you expect more from your suppliers than the usual standard? Challenge us – the more demanding your task, the better. Because in addition to series production with absolute precision according to your specifications, first-class quality and on-time delivery, we offer you the added value that makes the decisive difference.

Our high standards are also apparent in the audited quality management systems, according to whose criteria we work. Besides the qualification according to IATF 16949, ISO 9001: 2015, the environmental certification according to ISO 14000 is important to us.

Competencies:
- Precision turning and milling parts for series or single production, as well as die-cut and bent parts
- For the automotive industry, agricultural mechanical engineering, energy and fastening technology, hydraulics, pneumatics and many other industries

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Kubota Baumaschinen GmbH

For Earth, for Life

Kubota is one of the globally operating and internationally leading producers in plant construction and mechanical engineering. The Kubota Baumaschinen GmbH in Zweibrücken produces construction machinery for the European market and is one of the mainstays of the Group.

The name of the company refers to its Japanese founder Gonshiro Kubota – and stands for a vital co-existence between tradition and innovation: customer-orientation and continual development have ensured that after 124 years of company history, Kubota is more modern, versatile and successful today than ever before.

The headquarters of the Kubota Group is located in Osaka/Japan. With roughly 40.000 employees in more than 110 countries, the Kubota Group achieved a turnover of over 16 billion US dollars in 2017. In addition to agricultural engineering as its main business, Kubota produces a variety of other products, such as filtration systems, irrigation systems, steel pipes, roofing systems and large valves.

In Europe, Kubota achieved a turnover of 2.2 billion Euro with 4,400 employees. The European organisation consists of nine production plants and various distribution, service and sales units offering tractors, construction machinery, industrial engines, agricultural machinery, multi-purpose vehicles and lawn care equipment. The European headquarter is located in Nieuw Vennep, the Netherlands.

Kubota's success story began in 1989 in Zweibrücken. Today, Kubota Baumaschinen GmbH is one of the world's leading manufacturers of state-of-the-art compact excavators. In addition, the company has also been developing and manufacturing wheel loaders at its Zweibrücken site since 2014. These powerful machines have a strong foothold in the most diverse fields of application and are used worldwide. The fact that Kubota outright relies on the Zweibrücken site is evidenced by its investment of around 2.5 million Euro in a new warehouse and production hall for wheel loaders and is a clear endorsement of the local location.

Competencies:
Production of
- Compact excavators
- Wheel loaders
- Track dumpers
- Europe-wide comprehensive dealer network for sales and logistics

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Körber Supply Chain Automation Eisenberg GmbH

Palletized to perfection

Langhammer becomes Körber:
World's leading provider of supply chain solutions is now a Körber company.

Langhammer made major changes with respect to its identity and the way it presents itself over the course of 2020. On September 1, 2020, we officially joined our affiliated companies under the Körber umbrella.

For decades, we at Körber have built a long tradition in the field of logistics and all Körber companies have proven successful in a number of projects around the world. This entire „know-how" is now combined under one brand.

Langhammer has been operating under the new name Körber Supply Chain Automation Eisenberg since August 10, 2020.

The product portfolio remains unchanged. Specialized in production logistics, our particular focus is on the modular design of systems for palletizing, pallet transport, and piece goods cargo. Our range of products and services includes automation solutions, individually tailored to meet customer needs in various industries. These include tissue and food manufacturers as well as the chemical and personal care sectors.

KÖRBER

Competencies:
· System supplier for palleting support, pallet transport, and piece goods cargo
· Scalable automation systems
· Comprehensive know-how in production logistics processes
· Expert in finding solutions for our customers

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LÖSI GmbH

Highest quality hydraulic systems for the entire world

Founded in 1982, LöSi is a family-owned company now in its second generation with facilities in Germany, Great Britain, and Bulgaria. LöSi markets hydraulic machine components and designs integrated hydraulic systems – fast, flexible, reliable, and efficient.

Machines are the core of our company. They ensure proper functioning of the production and service cycles. Over the past decades, LöSi has developed a great amount of know-how, but the most important of all is the direct contact to the customers. Good service makes a difference: understanding and dialog among equals.

LöSi founded LoSi Ltd. in Great Britain in 2012 to provide the same high standard of service in Great Britain and Ireland. LoSi Ltd. offers a wide range of products and considerable storage capacities that permit it to supply the right products and solutions to meet the needs of its customers.

LIK Hydraulik became the newest member of the LöSi Group in 2016. The company has designed and manufactured special valves to customer specification for more than 20 years. The addition of LIK Hydraulik was a practical and purposeful expansion of LöSi Group's already extensive capabilities.

LöSi maintains more than 20,000 hydraulic products in stock. LöSi warehouses offer a wide selection of hydraulic components. Thanks to our broad product portfolio, LöSi is able to quickly respond to individual customer requirements.

LöSi is also on track in the digital transformation. The customer portal enables customers to search for items and check the inventory levels. This is also quite easy to do using the LöSi mobile app. In addition, customers can view their current orders and query the current delivery status.

LÖSI®
Getriebe — Steuerungen — Hydraulik

Competencies:
· Hydraulic systems
· Hydraulic drive systems
· Components and attachments
· Design and development
· Assembly, repair, and services

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Main-Metall Tribologie GmbH

At home in innovative markets

Originally founded as a foundry, Main-Metall developed over time to become a developer, producer, and supplier of a wide assortment of high quality friction bearings and guide elements for machine and plant construction.

Permanently in motion - that has been our recipe for our success for more than 90 years. Tribology is the study of friction, lubrication, and wear and that is our business.

Our specialists attend professional seminars and maintain close contacts to the research institutes and experienced competent experts in various disciplines.

Our in house development of products and manufacturing processes is based on the research and technical expertise that has made Main-Metall the partner of choice on international markets.

The range and versatility of our products in the areas of friction bearings, bearing materials, and metal casting is without equal in the market. Our comprehensive services range from expert consulting to individual problem solving and custom construction.

Main-Metall is a tribology partner with comprehensive problem solving competence. We recognize trends and provide creative and future-proof technical solutions to the market.

Our employees receive internal and external training and are permanently kept up to date with the latest technical advances.

The competence, motivation, and identification of our employees with Main-Metall have a very positive effect on the quality, reliability, and flexibility of our service.

MAIN
METALL

Competencies:
Development and production of high quality friction bearings and guide elements for machine manufacturing and plant construction

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MEC Elektronische Komponenten GmbH

Top performance in the assembly of printed circuit boards

Whether in automobile, medical, or alternative energy systems, everything revolves around one small detail: the electronic brain, i.e., the assembled circuit board. If this fails, the entire system will no longer function. This lends special importance to the selection of your electronic components supplier.

MEC Elektronische Komponenten has 35 years of experience with about 140 employees making smart custom solutions: MEC is a competent partner in all stages of value creation in electronic manufacturing – from development to high volume production. Through the continuous improvement of manufacturing processes and a high level of automation, we guarantee fault-free production, no matter how complex the product may be. The resulting increase in productivity enables MEC to offer fair, internationally competitive price-performance ratios. Thanks to state-of-the-art technologies, outstanding service performance, and a steady investment in machinery, we can meet all requirements in the assembly of circuit boards.

Already, many millions of assemblies have been produced for customers in Europe, Asia, and America – from the automotive to the medical systems sectors to alternative energies. Many top, international companies rely on the know-how at MEC. Resting on these laurels is not

an option: MEC views each new project as a chance to further develop the company and to celebrate yet another success together with our customer.

mec
elektronische komponenten gmbh

Competencies:
· Circuit board assembly (sample and series)
· EMS services of all types
· Automotive industry, Solar technologies, Medical systems,
· Navigation systems, Network technology, Sanitation
· Industrial systems, Energy distribution
· ISO 9001 and IATF 16949 certified
· Know-how since 1984

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MiniTec GmbH & Co. KG

Simple Solutions for Complex Systems

Since its foundation in 1986, MiniTec has steadily grown from a miniature guide track specialist into a leading technology company. Today, 400 experts at 12 locations develop tailor-made solutions for our customers' problems.

An integral part of MiniTec's company ethos is to keep all the essential competencies and components in-house and to optimise them to meet our high quality standards. This applies to our modular system, as well as our linear technology. Thanks to a strict modular principle, we achieve efficiency with utmost reliability by avoiding superfluous product diversity and simultaneously developing complementary CAD software. The benchmark of our profile system is: the Art of Simplicity.

We create sophisticated solutions for a wide variety of tasks from diverse sectors of industry on the basis of our profile system. Important industrial companies worldwide are our customers. Together with leading research institutes like DFKI and the Fraunhofer Institute, we are working on pioneering developments in ergonomics and industry 4.0. As a consequence of the exacting technical standards, we have this motto for our complete solutions: the Engineers Choice.

Our solutions are every bit as individual as our customers' requirements. As a full-service manufacturer, we implement intelligent systems for a diverse range of tasks in all important industrial sectors on the basis of our profile system.

The main customers of MiniTec are renowned manufacturers and suppliers of the automotive industry, solar technology manufacturers, as well as providers of automation systems, packaging machines, general mechanical engineering and assembly technology. Prominent examples include test equipment for the Airbus A380, ergonomically and rationally optimised production facilities for electronics manufacturers, assembly lines for car seats and back-end assembly lines for solar modules.

MiniTec
THE ART OF SIMPLICITY

Competencies:
- Automation and special purpose machine construction in the fields of conveyance, assembly, testing and soldering
- Fire fighting technology
- Solar technology
- Consulting, construction and assembly
- Software and training

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MKT Metall-Kunststoff-Technik GmbH & Co. KG

From Weilerbach to the world

Founded in 1990, MKT Metall-Kunststoff-Technik has developed from a small company to a solid medium-sized enterprise with about 200 employees.

Today, MKT is one of the world's market leaders for high-quality steel and chemical fasteners – collectively known as dowels – used for large concrete structures such as stadiums, tunnels, and facades. The large assortment of standard products available from stock includes 1200 different items, so dowels that fit the exact requirement of the project can be selected. Additionally, we can produce customized special solutions on customer demand.

The company's manufacturing and logistics buildings are located on 40,000 sqm in Weilerbach's industrial zone (Auf dem Immel). The three-shift operation processes around 30 tons of steel and stainless steel every day. The various dowel blanks are turned from steel or produced in an ultra-modern plant using the cold heading process, i.e., brought to their final form by compression and tensile forces. This environmentally friendly process produces no metal waste and energy consumption is low. Following galvanizing performed external to the company, the dowels are assembled and shipped worldwide. An extension of the logistics building that more than doubled the storage area from 2000 to around 5000 sqm. was completed in September 2020.

MKT has acquired European Technical Assessments (ETAs) for nearly all of its products and product groups. Such an assessment certifies the bearing capacity of the dowel and gives the user confidence in the selection of the appropriate elements.

MKT is one of only a few producers with its own test and development facility equipped with sophisticated technologies to carry out complex, internal test and evaluation. The test lab also facilitates a fast reaction to special customer needs for special solutions. Furthermore, the company offers free, in-house developed software, which enables even less experienced users to assess dowels according to engineering specifications. In the event of questions, the employees of MKT Application Systems are available to customers for advice and support.

MKT dowels really have very little to do with the usual plastic dowels used to attach wall shelving.

Competencies:
- Manufacturer of high quality dowel systems
- Products Made in Germany
- In-house test and development lab
- Custom solutions for high and low volume production
- Worldwide distribution

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PMB - Präzisionsmaschinenbau Bobertag GmbH

The art of balancing

PMB-Präzisionsmaschinenbau Bobertag was founded in Kaiserslautern in the year 2008 and has become a technology leader in the field of ultra-precision balancing systems with its own measuring systems, software, and the CAROBA® Balancer.

PMB represents the highest standards in balancing technology from micro-fans to large gears and from individual parts to high volume products.

Balancing equipment
The „OnDesk" model is a table-top, universal balancing system – for lab work and prototype construction to series balancing – that can be returned to the shelf to save space when the user is finished. The somewhat larger „Universal" balancing stand with its protective cover has a greater functional range for industrial processes and tends to be used for fast rotating workpieces.

Laser balancing and jet application
Laser correction of imbalances is, especially, well-suited for small parts that are designed to turn very fast or run very smoothly when in use. The unbalanced mass is removed without force and without cutting. Correction accuracies in the micro-gram range are reliably processed. Jet balancing is a relatively new and innovative method for correcting an imbalance. In the process, a UV-cured adhesive is sprayed onto the surface in small droplets. Force-free and clean.

Measuring systems and software – also for subsequent instrumentation
When in-house test benches are available, the UMS measuring systems from PMB can instrument them. Often, PMB UMS can also provide a dramatic increase in accuracy over the older balancing machines of market competitors.

Outstanding service
In the PMB contract balancing center, customer products are balanced with the same balancing systems that are available for purchase by customers for their own use. The company advises customers on all aspects of balancing, and supports planning and implementation. Outstanding service, regular software updates, and maintenance contracts ensure long term product reliability.

Competencies:
· Balancing machines and complete systems
· Balancing and analysis software
· Contract balancing
· Consulting and operator training
· After Sales Service
· Research and Development

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POLY TOOLS bennewart GmbH

Quality tools for demanding products

POLY-TOOLS is focused on providing customers comprehensive technical support from product concept to successful mold validation.

Our special service is to develop a technically innovative solution to customer specification and combine this with a modern and efficient design to create high quality tools. Our capabilities, both in development and in production, enable us to process even large orders quickly and always to the fullest satisfaction of our customers.

The use of the latest technology guarantees an innovative, rational, responsive, and safe process flow. Our project-related structure in terms of order processing enables us to respond with great flexibility and to guarantee the professional and timely execution of the required tool.

Accumulated expertise is a basic prerequisite for competent product consultation, tool design, and, ultimately, for outstanding product quality. Next to product design and prototyping, our range of services includes constructive development of parts and tools as well as tool production. By insisting on the highest standards for material and staff (in terms of engineering and service), we achieve significant added value, which we see rewarded in long term customer loyalty. We ensure our material quality through partnerships with proven suppliers based on long-term cooperation and successful performance. Our services also include professional project consulting, support, documentation, and after sales support for the entire life cycle of the tool.

The DIN EN ISO 9001:2015 certified quality management system and the PLM system for central project documentation are the core elements of every work process.

Competencies:
Consulting, Development, and Production of pneumatic tools, injection molding tools and injection molded parts
Sectors:
· Petroleum Engineering & Automobile Industries
· Chemical Industry
· Food Industry
· Cosmetics Industry

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RailMaint GmbH - Plant Kaiserslautern

The Palatinate Competence Center for Rail Vehicle Components

The Kaiserslautern plant is one of five sites operated by RailMaint – the largest private maintainer of rail vehicles in Germany. The company specializes in repair, test, and reconditioning of components.

For decades, the core competence of the site has included all aspects of professional component services, meaning that highly qualified employees have acquired comprehensive experience in this technical industry. On a basis of modern manufacturing processes and test methods, we process vehicle components such as wheel sets, brake parts, draw and buffing gear, which includes buffer gear, draw hooks, couplings, and friction dampers. New and custom-made products are also available on request.

The plant also develops solutions for all conventional tasks of freight car maintenance: damage repair, modernization, improvements, and rebuilds. In addition, we provide special and regular services in the areas of corrosion protection, blasting and painting processes, metalworking, steel construction, and complex welding work as well as mobile services.

Competencies:
- Repair, test, and reconditioning of rail vehicle components
- Repair and maintenance, modification, rebuilds, and Modernization of freight cars
- Special and regular services (corrosion protection, blasting and painting methods, sheet metal working, steel construction, welding

railmaint
service & solutions group

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rema fertigungstechnik gmbh

Specialized in Smart Cost Reduction

Rema‘s guiding philosophy is to always be a benefit to the customer and to constantly improve – highest quality, delivery reliability, and flexibility are the standard – at no extra charge. Our vision: To be the best regional training company.

In addition to CNC milling of medium sized series, our core competence is the manufacture of jigs and fixtures for custom parts and the mechanical assembly of machines. Rema is a partner of global players, supplying integrated solutions in the areas of „cost reduction“ and „customer service“ over many years.

Three shifts, seven days a week when necessary – make parts for agricultural equipment, forklifts, components for pneumatic and hydraulic power units, and assemblies for automobile manufacturing. Rema manufactures aluminum profiles up to seven meters in length at 5-axis machining centers on 4,000 sqm of production floor in the village of Sembach. Project volume/potential of half a million euros and more, including material acquisition and surface treatments, are the basis of such partnerships.

In addition to providing vocational training for young people, rema also participates in the non-profit model project „Machining for Rwanda’s Future“ a truly unique service for such a small company. Rema has supported the UN Goals 2015 and Agenda 2030 from the beginning.

Besides providing customer benefit, education is a top priority at rema. „The children are the future and give meaning to our actions. Customers who buy from us care about values like transparency, passion, and sustainability and we represent those values. That explains why our customers are also our partners,“ said Reiner Rudolphi, Managing Director at rema.

rema
ZUKUNFT FERTIGEN

Competencies:
· Metal component machining
· Module assembly
· Tool and jig construction
· Aluminum profile machining
· Measuring and test engineering

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Robot Makers GmbH

When Mobile Machinery Becomes Intelligent

While Google (Waymo), Uber or Tesla take care of road traffic, Robot Makers GmbH work off the beaten track.

“Mission Complete” is displayed by the intelligent mulch system that has just freed several dozen rows of grape vines from the tall grass. Now the machine waits for new instructions from the operator. The innovative control systems of the technology leader from Kaiserslautern have turned this vehicle into an intelligent mobile machine that can independently carry out recurrent maintenance work in the vineyard.

“Improve safety, increase efficiency, increase ease of use,” Carsten Hillenbrand and Dr. Bernd Helge Leroch break down the purpose of their intelligent systems into three basic objectives. The fact that the technology is also able to achieve these objectives is shown, for example, by the implement automation Vineyard-PilotAssistant, which was developed together with the company Braun Maschinenbau from Landau. With certain combinations of equipment, the intelligent control system doubles the speed of work while optimising the results and also reducing damage to the valuable vines. The same applies for the RowCropPilot, which reliably controls a caterpillar vehicle in steep slope viticulture, thus keeping the operator off of the hillside danger zone.

But the systems of Robot Makers GmbH show strengths in other areas besides viticulture: “Our technology is suitable for use in almost all mobile machinery and implements that do their work off the public roads,” says managing director Bernd Helge Leroch. So far solutions have been realised for material handling, road production, the municipal sector, stage technology and even in the area of fully automated parking garages. The degree of automation varies from assistance systems to relieve the operator to (partially) autonomous functions and systems.

robot makers ®

Competencies:
Control technology for the realisation of intelligent mobile working machines, assistance systems, (partially) autonomous systems, automation of mobile machines

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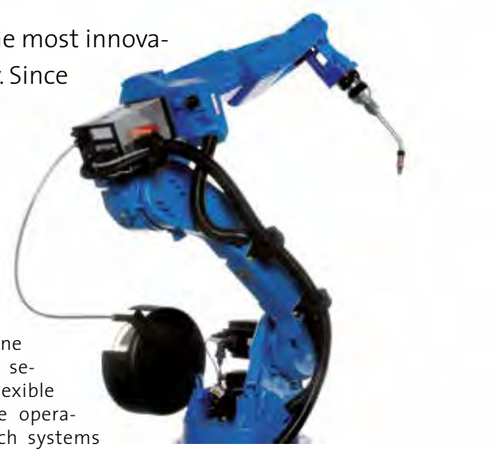
SKS Welding Systems GmbH

Made in Germany – Made by SKS

With its many years of experience, SKS sees itself as one of the most innovative system partners of the automotive and supplier industry. Since the 1980s, SKS Welding Systems has been using pioneering technologies to optimise arc welding processes.



Above all, the industry appreciates SKS' innovative strength and capacity for forward-looking and customer-oriented development work. SKS designs welding machines, welding torches and the associated arc welding processes, which sustainably expand the possibilities of automated robot welding.

The formula for success: The combination of a modular welding machine produced with high-performance components and a functional torch series for a wide range of applications. The systems are supplemented by flexible software solutions for welding data documentation – from stand-alone operation to network integration. In addition, the welding machines and torch systems are compatible with all common welding robots of well-known manufacturers. What makes SKS products particularly special is their maximum availability and their persistent service lives.

In 2009, SKS built its own production facilities in order to deliver top quality precision parts and to guarantee maximum availability of welding machines. In 2012, a new company building was established in Kaiserslautern, in 2018, the production capacity was doubled. This makes SKS the first choice for welding.

SKS welding machines are used by renowned automotive manufacturers and suppliers. Like the OEMs, Tier 1 and Tier 2 suppliers also manufacture exhaust, seat, axle, battery tray and bodywork with SKS welding systems.

Competencies:
- Development, production and sales of welding machines and components for automated/ robotised welding
- Welding Torch System
- Process development for GMA (single wire, double wire), MIG soldering
- Software/IT development

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Tadano Demag GmbH

At Home in Zweibrücken – in Use Worldwide

Zweibrücken-based crane manufacturer Tadano Demag, with around 1,500 employees, is one of the biggest employers in the region. Since the 1. August 2019, the company has belonged to the Japanese Tadano Group, which aspires to long-term global market leadership in the lifting industry.

Both companies share a long entrepreneurial tradition in the development and production of lifting technologies: for 200 years, the Demag brand has stood for the development of intelligent and innovative lifting solutions, and Tadano celebrates its 100th anniversary this year.

Tadano Demag develops, manufactures and sells innovative lattice boom crawler cranes and telescopic cranes with lifting capacities of up to 3,200 tonnes on its almost 100,000 square meter plant premises in Zweibrücken. These are used worldwide in power plant construction, in infrastructure projects, in refineries and in the construction of wind farms.

A Superlative Manufacturer
At the Zweibrücken site, Tadano Demag manufactures the world's largest crawler crane to enter series production: the CC 8800, which can lift loads of 1,250 tonnes up to 200 meters. This means Tadano Demag is also able to construct the tallest wind turbines worldwide. Such customer-oriented solutions make Tadano Demag a worldwide success.

Qualified employees develop innovative solutions
Tadano Demag owes its great innovative strength to its qualified employees: 80 percent of the workforce are skilled workers and one in ten workplaces is located in the areas of development and construction. In brief: the "smartest" minds in the industry work in the engineering departments. And to keep it that way, Tadano attaches great importance to the qualifications of its skilled junior employees. To this end, the company maintains a well-equipped training workshop in Zweibrücken for its apprentices, who regularly achieve top positions in national and international competitions.

Flexibility as a competitive advantage
With this mix of innovative power, customer orientation and qualified employees, Tadano Demag can react flexibly to the respectively current requirements of the markets. This is what makes the cranes from Zweibrücken so successful – at home and in the world at large.

Competencies:
· Development and production of
  - city cranes up to 45 t
  - all-terrain cranes up to 1,200 t
  - lattice boom crawler cranes up to 3,200 t
· Development of innovative control systems for the crane world, e.g. telemetry systems

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TLT-Turbo GmbH

Energy efficient industrial fans and ventilation systems

With more than 145 years of tradition and experience, our engineers strive to be the leading global supplier of fans and vent systems for mining, thermal power plant, and industrial use.

We developed and patented highly efficient designs that allow our products to deliver outstanding per formance while incurring less wear and tear – also under harsh and abrasive operating conditions. The result is a reduction of CO_2 emissions, significant energy cost savings, much less down time, less maintenance effort, and a longer service life for the machines of our customers.

TLT-Turbo is grounded on a strong tradition of cutting edge technologies and innovation in industrial ventilation. Our engineers have been developing ventilators and fans to improve our customers' operations in a variety of industries worldwide since 1873. TLT-Turbo was acquired in 2014 by PowerChina (Power Construction Corporation of China). The decision strengthened our global reach and enhanced our culture of trust, transparency, and commitment to success.

TLT-Turbo ventilators are custom-made for each application and adjusted to the operating environment and the specific requirements at each customer location. In this way, we achieve the required output with maximal efficiency.

Customer-specific analyses and designs are prepared by our in-house design and development department, which facilitates the development of customized solutions.

TLT-Turbo products deliver optimal performance for a variety of applications, for example, fire protection, chemical and petrochemical processes, iron and steel production, mine ventilation, power generation stations, ventilator systems, machine construction, food processing, pharmaceutical manufacturing, tunnel ventilation, and wind tunnels.

Our global network of production facilities, our teams, and the TLT-Turbo Centers of Excellence enables us to provide our customers with outstanding solutions and technologies – all with locally available product support and service.

TLT-Turbo

Competencies:
Extensive product portfolio of fans and ventilator systems for
· Tunnels and metro stations
· Mine ventilation systems
· Mechanical vapor condensers
· Industrial applications, wind tunnels, power plants
· and aftermarket services

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Xiton Photonics GmbH

Custom-made light

Lasers from Kaiserslautern are enabling cell phone displays, computer chips, and data highways worldwide: Xiton Photonics is an experienced development and production company known for its high quality lasers for more than 15 years.

We produce lasers for high technology applications based on non-linear optics. Our lasers are used by leading manufacturers in 3-shift operations on production lines around the world. (e.g., Samsung, LG).

Our success is the result of a long standing company philosophy of providing solutions that are responsive to the need of our customers. These needs may include laser light in special colors (wavelengths) and with special spectral attributes.

Our work does not end with the delivery of the new system. Rather, our customers can count on us as a reliable partner willing to contribute the expertise to fulfil wishes and solve problems.

We are a team of highly qualified experts, who share the same passion: a fascination for laser-light. Furthermore, we all share the vision of developing outstanding and innovative products. As a successful company, we have a responsibility to help those in need. Each year, we support social institutions, educational, and sports facilities. Our priority is on supporting the advancement of youth.

Xiton Photonics participates in public and private R&D projects. The current conditions for research and funding in Rhineland-Palatinate offer us significant support in the realization of high-tech laser systems, of a quality and accuracy without equal on the world market.

Xiton Photonics

Competencies:
· Laser systems for production and research
· High technology
· global sales and service network
· Team competence
· Respectful interaction

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WIPOTEC GROUP

World-class Weighing Technology

Over 1,000 employees worldwide, over 700 thereof in Kaiserslautern: the WIPOTEC GROUP offers a wide range of dynamic high-tech weighing and inspection technology for industrial use.

WIPOTEC Group is one of the world's leading suppliers of intelligent weighing and inspection technology. At the headquarters in Kaiserslautern, the technology leader for high-precision weighing technology develops and produces unique machine solutions and technologies for OEMs and end customers from a diverse range of industries.

Founded in 1988 as WIPOTEC Weighing and Positioning Systems GmbH with the core business of development, production and integration of ultra-fast precision weigh cells and weighing systems, today, the company group has an extensive range of weighing and product inspection solutions. As a in-line product inspection specialist WIPOTEC delivers systems for weight monitoring in combination with modern camera technology, metal detection, foreign object search, content and shape control with X-ray scanners, as well as label monitoring.

The range of solutions complements product tracking systems for the pharmaceutical industry and solutions for courier, express and postal services and intralogistics, which can read bar codes and record dimensions and weights of the shipments.

Lived sustainability: WIPOTEC sets not only technical standards for industrial companies in the region, but also ecological standards by building with energetic recovery in mind and generating renewable energy: Already today, the central production site supplies 85% of its own energy requirements with its own alternative energy sources (solar energy, medium depth geothermal energy 150m and deep geothermal energy 1500m, solar thermal energy, groundwater cooling, underground energy storage).

Competencies:
- World leading supplier of intelligent weighing and inspection technology
- Designed, constructed and manufactured in Germany
- Entire value chain: Hardware and softwaredevelopment, in-house production, after-sales service
- Premium quality and derived customer benefit in high-performance applications

As an attractive training company and partner for dual study courses with the University of Applied Sciences, Kaiserslautern, the innovative high-tech company offers a multitude of career opportunities for people in the future-orientated West Palatinate region.

WIPOTEC

INNOVATION. PASSION. FIRST.

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Universities, Institutes and Networks

Hochschule Kaiserslautern - University of Applied Sciences

Innovative Teaching and Learning – Vision, Development and Design in the „Connected Age“

As an institute of higher education for applied sciences, we are an interface between industry, technology, and research. In a purposeful and cooperative manner, with roots firmly grounded in the region, we produce highly qualified academics for the jobs of today and tomorrow.

Technical topics in science, business, and the concepts of Industrie 4.0 are increasingly complex. Teaching and research at the University of Applied Sciences Kaiserslautern is interested in promising, application-oriented, and forward-looking answers. We focus on real business needs with well-founded practical studies and interdisciplinary product development in the digital age. With more than 200 partner companies, there is a powerful impetus for us to realize our vision of responsibility, networking, and diversity in the region. Automotive expertise is particularly visible in highly specialized teaching units.

For example, research and teaching at the Institute for E-Mobility in Applied Engineering Sciences focuses on the development of energy-efficient systems in cooperation with partners such as engineering firms and test service providers. In actual projects, students are encouraged and assisted in applying their acquired know-how in a very concrete way, actively participating in the rapid advances in individual mobility.

The HCI2B working group is developing a highly flexible, simulated driving environment to study Human-Machine-Interaction in projects with an automotive focus. Students and researchers are developing innovative operating concepts and software frameworks for practical use in a variety of practical settings.

The primary research area High Efficiency Technical Systems (HTS) studies the optimization of complex networked systems. Experts in electrical engineering, computer science, and mechanical engineering develop interdisciplinary innovations from the initial idea to the final product integration. The interdisciplinary interaction of applied life sciences with micro- and nanotechnologies in the field of sensor technology is the major focus of research in the department of Integrated Miniaturized Systems (IMS), where the aim is the development of miniaturized systems for use in practical applications.

Hochschule Kaiserslautern
University of Applied Sciences

Competencies:
· Human Computer Interaction
· E-Mobility and energy efficient systems
· Software-intensive systems
· Sustainable products and services
· Digital transformation and Industrie 4.0
· Flexible study format for life long learning

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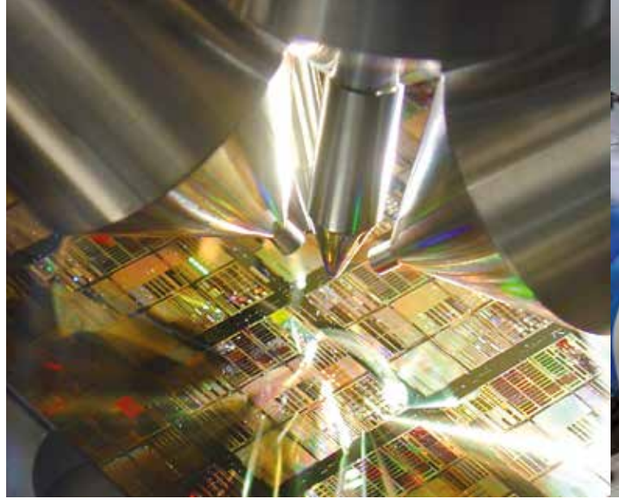

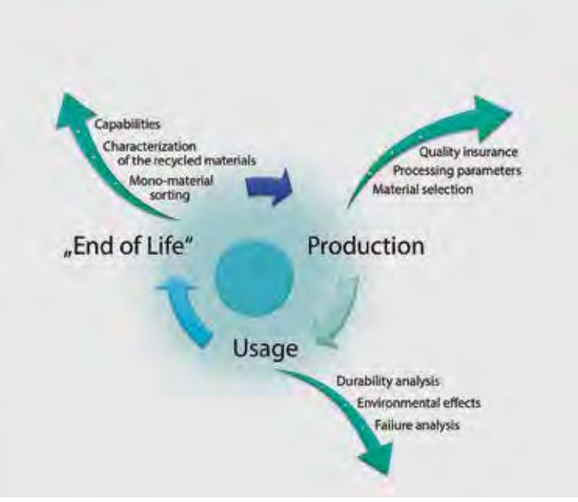

Institute for Surface and Thin Film Analysis (IFOS)

Surface and Thin Film Analysis

IFOS performs innovative product development and quality assurance for companies in the metalworking and electrical engineering sectors.

Flexible access to modern methods of surface and layer analysis represents a competitive advantage that should not be underestimated in the development and production of innovative products in which specific surface properties play a significant role in the proper functioning of the application. Beside the optical properties, conductivity, wear, adhesion, and corrosion properties, solderability, catalytic activity, electronic and antibacterial properties and much more are determined by the surface composition and structure.

In 1989, the state of Rhineland-Palatinate established the Institute for Surface and Thin Film Analysis (IFOS) in Kaiserslautern as a non-profit research institute at TU Kaiserslautern to create a link between university and the market-oriented economy. The major focus of the institute is to measure and optimize the quality of surfaces and to detect defects with the aim of preventing them in the future.

IFOS is equipped with nearly all instrumentation required for the analysis of modern material surfaces and thin film coatings. This equipment is purposefully selected depending on the specific task, i.e. the detection strength, spatial and/or depth resolution required, and Then, the appropriate method or combination of methods is selected.

The interdisciplinary IFOS team consists of scientists and technical specialists from the fields of physics, chemistry, and the materials and engineering sciences. Together they have many years of experience in customer-oriented solutions to analytical problems encountered in industrial practice.

The institute serves companies as an analytical services provider and supports its customers in the development of specific, company-related materials, products, and processes through defect and damage analysis, quality assurance, and other areas of application.

Some examples of practical use-cases are provided at https://www.ifos.uni-kl.de/auftrags-forschung/anwendungsbeispiele (German only).

Competencies:
· Instrumented surface analysis
· Industrial contract research
· Partner for project research
· Fault and damage analysis
· Surface and thin film technologies

ifos
Institut für Oberflächen- und Schichtanalytik GmbH

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Institute for Composite Materials

Composites prepared for the future

Combining the positive properties of several materials to form one, new composite material. These are an excellent alternative to metal structures in selected applications.

The Institute for Composite Materials (IVW) is a non-profit research institute of the state of Rhineland-Palatinate and TU Kaiserslautern. For more than thirty years, it has carried out basic research on composite materials for future applications in the areas of mobility, energy, climate, environment, and health care, all of great significance. New materials, construction methods, and manufacturing processes are studied, analyzed, and – after establishing a basic understanding – tailored to the respective requirements.

IVW focuses on entire process chains – from the material properties to characterization and simulation, and from the construction methods and manufacturing technologies to component testing and eventual recycling. New ideas and innovative concepts are essential elements of our research and, especially, important for the continued growth of the institute and its spin-offs in the West Palatinate region.

Newly acquired knowledge is transferred, mainly to science, but also to teaching, to the interested public and to industrial applications.

Customized composites are superior to metals in mechanical strength and, often, also in terms of stability. Also, very advantageous for fast moving components is their low dynamic weight. Further positive factors when considering usage are: temperature resistance in some plastics can reach up to 250 degrees Celsius, durability, and corrosion resistance as well as robustness against aggressive media and abrasion.

Major research focus:
· Polymer composites
· Biocomposites
· Material analysis
· Feasibility studies
· Component design
· Process technologies
· Connection design
· Light construction
· Hybrid structures

Institut für Verbundwerkstoffe

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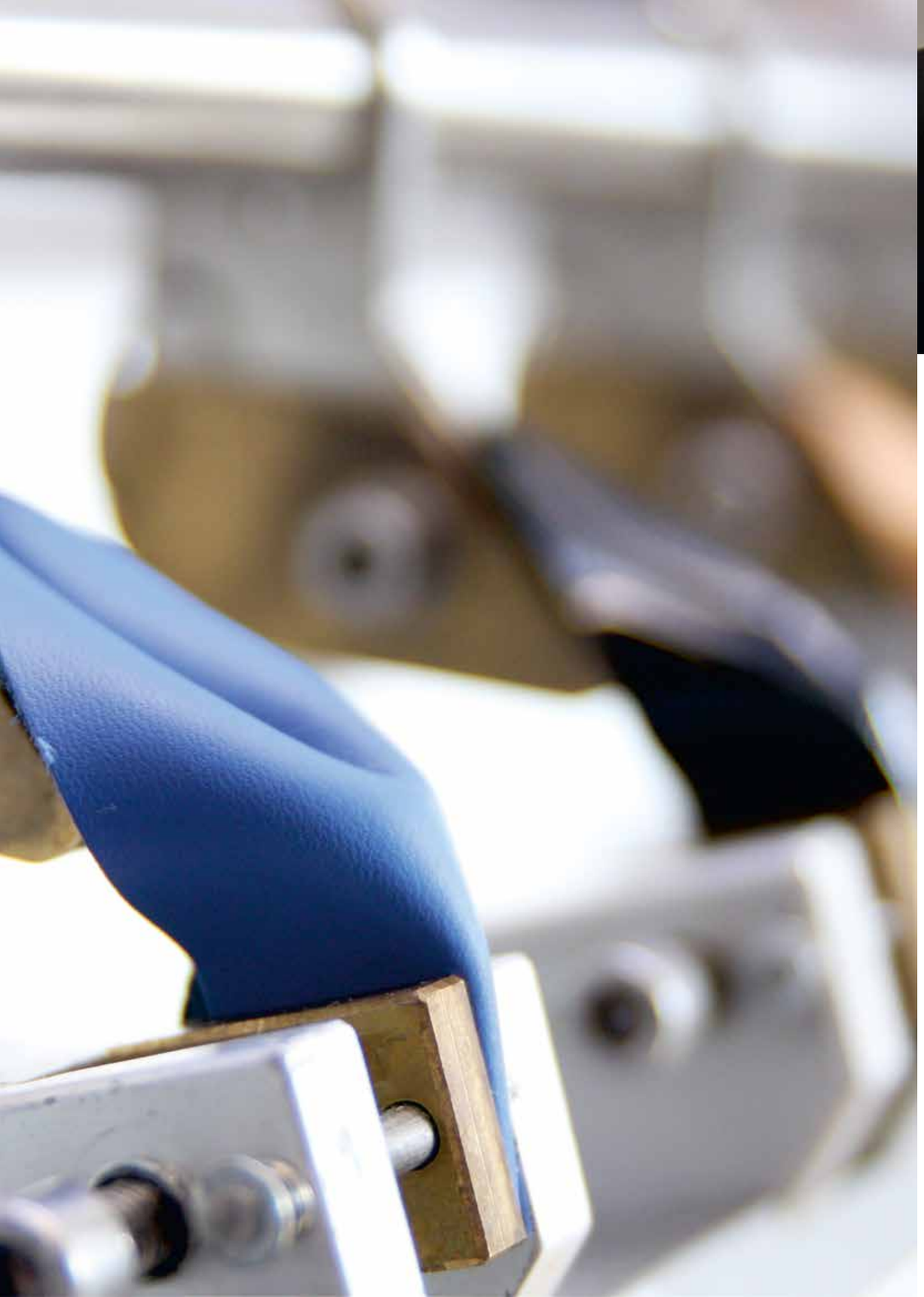

Test and Research Institute Pirmasens (PFI)

Testing & research for better products

Our aim is to develop modern technologies, innovative products, and new material applications.

The Test and Research Institute Pirmasens was originally founded to respond to the needs of the footwear industry. In the meantime it has developed into a modern service and research center with worldwide activities. The institute's depth of expertise is concentrated in the production methods, components, and materials used in the shoe and leather industry. Today, PFI receives orders from the footwear and leather goods industries in addition to the textile, plastics, adhesives, and automotive sectors. The biotechnology and alternative energy sectors also welcome PFI as a reliable partner.

Roughly 100 highly qualified scientists, engineers, and lab technicians conduct chemical, physical, biotech, and microbiological tests on products. The aim of PFI is to make products better, safer, and more efficient for its customers. PFI's technical department develops and designs a wide range of custom-built machines and devices. The company also has extensive know-how in the fields of measurement technology, automation, and mechanical engineering.

As an accredited certification authority, PFI inspects and certifies the quality of consumer products and personal protective equipment in addition to corporate quality, energy, and environmental management systems.

Today, numerous research activities go far beyond the footwear industry to include topics such as orthopedic technology and the material and energetic use of biomass. The biotechnology department operates several experimental labs to break down bio-based materials into fractions as well as for the fermentation of biomass.

The institute attaches great importance to footwear products and orthopedic technologies for people with limited mobility and for the safety and comfort of workwear. Within a framework of non-profit research programs, PFI initiates and manages industrially relevant research. The research activities are made possible through membership in the research association AiF and the Zuse Society.

PFI Germany

Competencies:
- Chemical, physical, biotech, and microbiology product testing
- Research in the fields of biotechnology and shoe and orthopedic technology
- Accredited certification authority
- Design and construction of diverse test facilities

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Technology Initiative SmartFactory KL

Experience Production Level 4

SmartFactoryKL is a network of more than 50 members from industry and research. These partners perform research and development projects related to Industrie 4.0 and the factories of the future.

The centerpiece of our work is the world's most unique manufacturer-independent demonstrator and research platform – the Industrie 4.0 production plant of the SmartFactoryKL partner consortium. This is where researchers and operators are working to advance the concepts of Industrie 4.0 by testing innovative information and communication technologies and further developing them for industrial production environments. The latest, mature information technologies are integrated with factory automation systems. The aim is to pave the way for more flexible, more efficient production concepts.

The facilities of the German Center for Artificial Intelligence (DFKI) in Kaiserslautern host our research teams as they compete for and work on numerous international and national research projects related to Industrie 4.0.

Within the context of Industrie 4.0, the next level of development is defined as Production Level 4.

What is that exactly? Production Level 4 ...
... Increases robustness through agile reactions to external influences
... Requires people as decision makers in the production process
... Develops augmented vision methods as extensions of human intelligence
... Increases transparency through automated data processing
... Networks and automates production scheduling
... Enables flexible plant reconfiguration / retooling
... Implies a self-learning ability to enable continuous improvement

Our goal by the year 2025 is to steadily expand and upgrade the Production Level 4 plant, which was first commissioned in 2020. In this way, the factory of today will become the Smart Factory of tomorrow.

smartFactory KL®

Competencies:
· Manufacturer-independent Industrie 4.0 demo plant
· Production Level 4
· Artificial Intelligence
· Software Engineering
· Interdisciplinary Research

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Foto: © TUK/Thomas Lohr

Kaiserslautern University of Technology

Interdisciplinary approach to Metalworking, Electrical, and Mechanical Engineering

TU Kaiserslautern's (TUK) teaching and research priority is on the technical and natural sciences, which enables it to focus on the major challenges of regional economies – both within Germany as well as in global cooperative ventures. It enjoys a highly respected international reputation as a campus university with numerous nearby research institutes. TUK is organized in 12 departments that present about 100 courses of study. Kaiserslautern, a center of education and research, is also home to an advanced commercial vehicle „cluster."

TUK develops solutions for complex, application-oriented scenarios: from intelligent materials (systems) research at the interface of materials and production processes to hardware and hardware-related software for embedded systems. It promotes forward-looking electrical and computer engineering, mechanical and process engineering with digital methods and comprehensive cross-departmental networking. Well-equipped lab facilities are available for experiments and testing, etc. Currently, with six collaborative research centers and many interdisciplinary projects, TUK has a leading role in the German and international research landscape. It pursues economic excellence by addressing practical problems, as demonstrated by the many cooperative agreements with small and medium sized partners in the region and with global players in Germany and abroad.

Numerous institutes located on campus and the adjacent research mile extend the research portfolio and act as a catalyst for knowledge transfer. TUK is a key engine for innovative start-ups and has already produced several „hidden champions." The award-winning start-up office is the central contact point for establishing new companies with innovative ideas.

TUK is constantly expanding its circle of cooperation and is proud to work on the challenges of tomorrow with you.

TECHNISCHE UNIVERSITÄT KAISERSLAUTERN

Competencies:
- Established and new, also hybrid materials, Material analysis
- Alternative fuels for combustion engines
- Production processes, also with additive manufacturing Simulation environments (incl. AR and VR)
- Digital Production Systems, Control Systems Automation
- Embedded and Microelectronic Systems
- 5G Technologies
- Media and Communications Systems
- Measuring and Sensor Systems
- Sustainable Energy Supplies

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ZukunftsRegion Westpfalz

ZukunftsRegion Westpfalz is a regional initiative committed to the goal of bundling the forces of the West Palatinate to carry out joint projects and, in this way, strengthen the future viability of the region. Supported by the Palatinate Chamber of Industry and Commerce (IHK) and the state government, in just a few years, the association has grown to more than 350 members from business, science, government, and civic organizations.

www.zukunftsregion-westpfalz.de

Foto: Fraunhofer IESE

ZukunftsRegion
Westpfalz

Technology leaders with outstanding products, a highly qualified workforce, and a long tradition of support for the metalworking industries are factors contributing to the economic strength of the West Palatinate in this field today.

Countless small and medium-sized companies in the metalworking, electrical-, and mechanical engineering sectors join to create a robust network with mutually complementary expertise. Outstanding research capabilities and educational opportunities provide the foundation for continuous renewal of these tradition-rich industry leaders.

This brochure presents the regional network of high performance companies and innovative research institutes, whose expertise is tightly intertwined. On these pages, entrepreneurs and investors seeking a suitable environment for their investments will find the ideal business contacts.

Supported by:

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