



**Baden-Württemberg**  
Ministry of Economic Affairs

# Machine Tools

# Machine-tool players – a world-class cluster in Baden-Württemberg

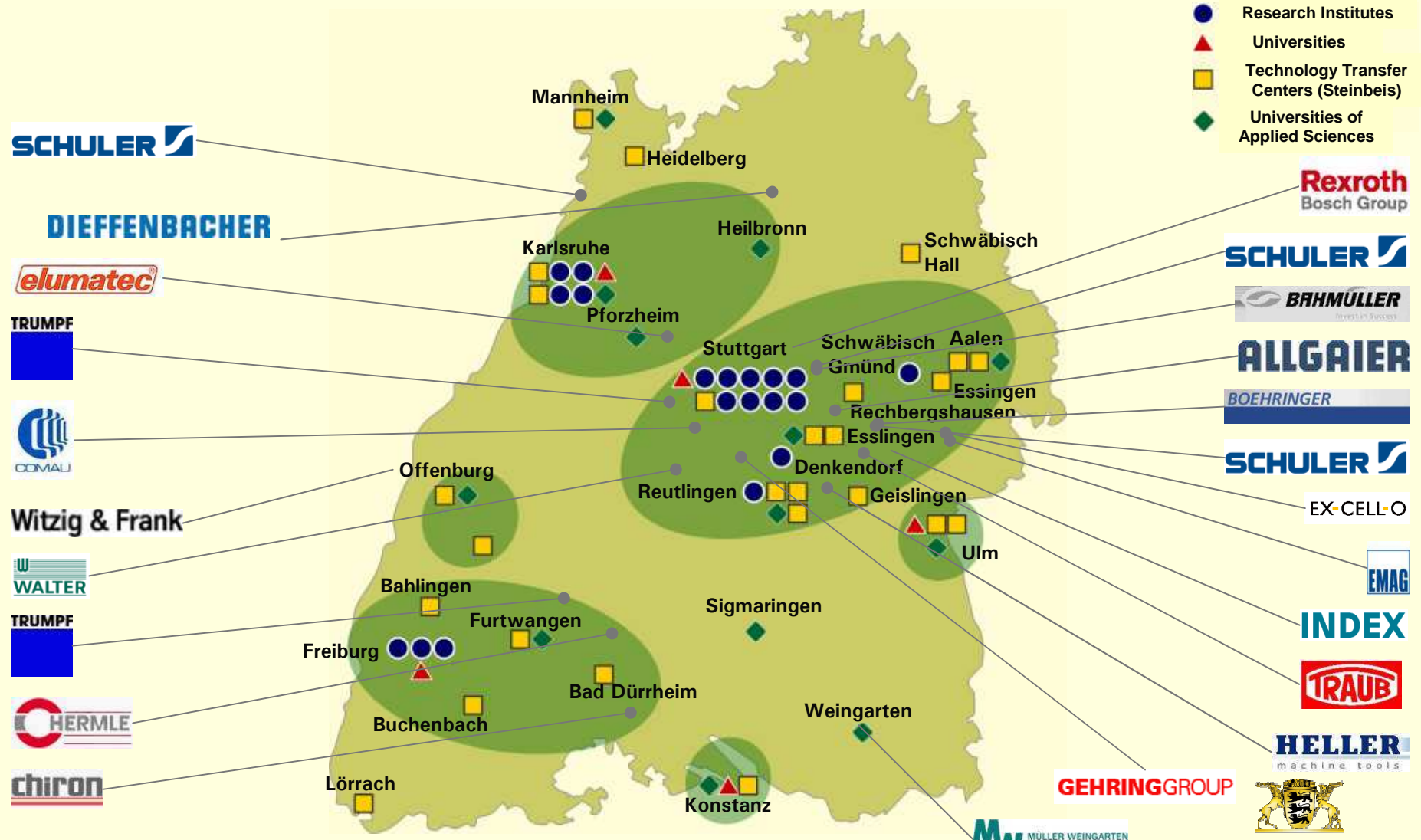
- A quarter of the global sales from the machine tool industry is attributable to German manufacturers, half of which are in Baden-Württemberg. This means that more revenues are generated by industry players in Baden-Württemberg than in the USA. What's more, global sales are expected to increase over the coming years.
- Machine-tool companies are key partners not only for other engineering firms, but also for automotive, electronics and aerospace players. This is because they drive innovation in all of these areas.
- Baden-Württemberg is an international frontrunner when it comes to machine tools:
  - Europe's three leading companies specializing in sheet-metal processing (in terms of sales) come from Baden-Württemberg: Trumpf, Schuler and Müller Weingarten.
  - Other international firms, such as Chiron, INDEX and Dieffenbacher, are also headquartered in the region.
- Many of the industries that require machine tools have a significant presence in Baden-Württemberg. In addition, there are specialized universities and excellent research facilities. With all this on offer, the region is an ideal location for machine-tool players.



# Regional Centers in Cluster Machine Tools

(Relevant research institutes, universities and examples of important enterprises)

- Research Institutes
- ▲ Universities
- Technology Transfer Centers (Steinbeis)
- ◆ Universities of Applied Sciences



# Machine Tools – Selected Companies



TRUMPF GmbH + Co. KG, Ditzingen

<http://www.trumpf.com>



Walter AG, Tübingen

<http://www.walter-ag.de>



Gebr. HELLER Maschinenfabrik GmbH, Nürtingen

<http://www.heller-machinetools.com>



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# Machine Tools – Selected Companies



Schuler Pressen GmbH & Co. KG, Göppingen

<http://www.schulergroup.com>



Müller Weingarten AG, Weingarten, Esslingen

<http://www.mueller-weingarten.de>



Trumpf Laser GmbH & Co. KG, Schramberg

<http://www.trumpf-laser.com>

**Witzig & Frank**

Witzig & Frank GmbH, Offenburg

<http://www.witzig-frank.com>



# Machine Tools – Selected Companies



**Comau Deutschland GmbH, Böblingen**

<http://www.comau.com>



**Schuler Hydrap GmbH & Co. KG, Plüderhausen**

<http://www.schulergroup.com>



**Schuler SMG GmbH & Co. KG, Waghäusel**

<http://www.schulergroup.com>



**Bosch Rexroth AG, Stuttgart**

<http://www.boschrexroth.com>



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# Machine Tools – Selected Companies



**EMAG Maschinenfabrik GmbH, Salach**

<http://www.emag.de>

**EX-CELL-O**

**Ex-Cell-O GmbH, Eislingen**

<http://www.ex-cell-o.de>

**INDEX**

**INDEX-Werke GmbH & Co. KG, Esslingen**

<http://www.index-werke.de>



**Chiron-Werke GmbH & Co. KG, Tuttlingen**

<http://www.chiron.de>



# Machine Tools – Selected Companies

The logo for Boehring, featuring the word "BOEHRINGER" in blue capital letters on a white background, with a blue horizontal bar below it.

**Boehring Werkzeugmaschinen, Göppingen**

<http://www.boehring-werkzeugmaschinen.de>



**Traub Drehmaschinen GmbH, Reichenbach an der Fils**

<http://www.traub.de>

The logo for Dieffenbacher, featuring the word "DIEFFENBACHER" in blue capital letters.

**DIEFFENBACHER GmbH & Co., Eppingen**

<http://www.dieffenbacher.de>

The logo for Gehring, featuring the words "GEHRING" and "GROUP" in red capital letters on a white background.

**Maschinenfabrik GEHRING GmbH & Co. KG, Ostfildern**

<http://www.gehring.de>



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# Machine Tools – Selected Companies



**HERMLE AG, Gosheim**

<http://www.hermle.de>



**Allgaier Werke GmbH, Udingen**

<http://www.allgaier.de>



**Wilhelm Bahmüller Maschinenbau Präzisionswerkzeuge GmbH, Plüderhausen**

<http://www.bahmueller.de>



**elumatec GmbH & Co. KG, Mühlacker**

<http://www.elumatec.de>



# Machine Tools – Regional Centers – Selected Companies

Adolf Illig Maschinenbau GmbH, Heilbronn

Elumatec GmbH Co. KG, Mühlacker

Gebr. Saacke GmbH & Co. KG, Pforzheim

Comau Deutschland GmbH, Böblingen

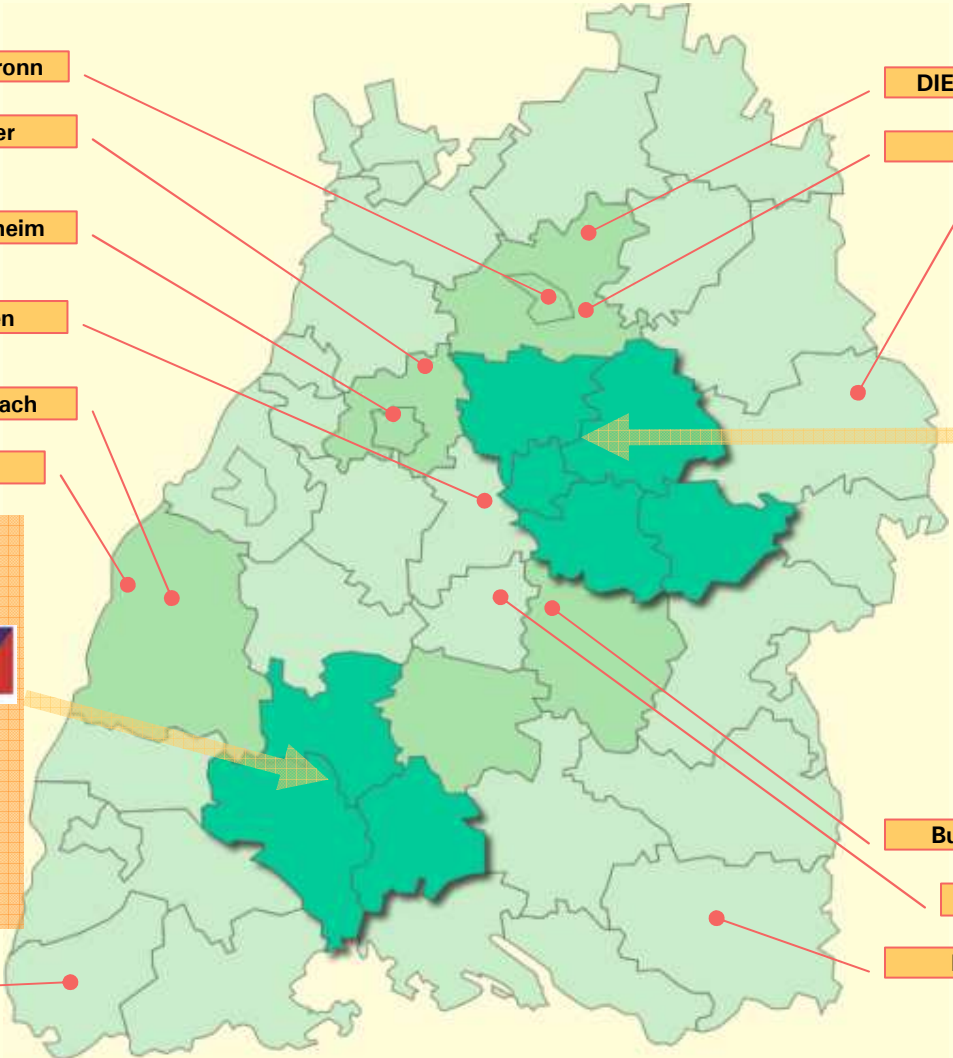
Erwin Junker Maschinenfabrik, Nordrach

Witzig & Frank GmbH, Offenburg

Schwarzwald-Baar-District,  
Rottweil, Tuttlingen



Dreistern-Werk, Schopfheim



DIEFFENBACHER GmbH & Co., Eppingen

Behringer GmbH, Kirchardt

Alfing Kessler GmbH, Aalen

Stuttgart Region



Burkhardt + Weber GmbH, Reutlingen

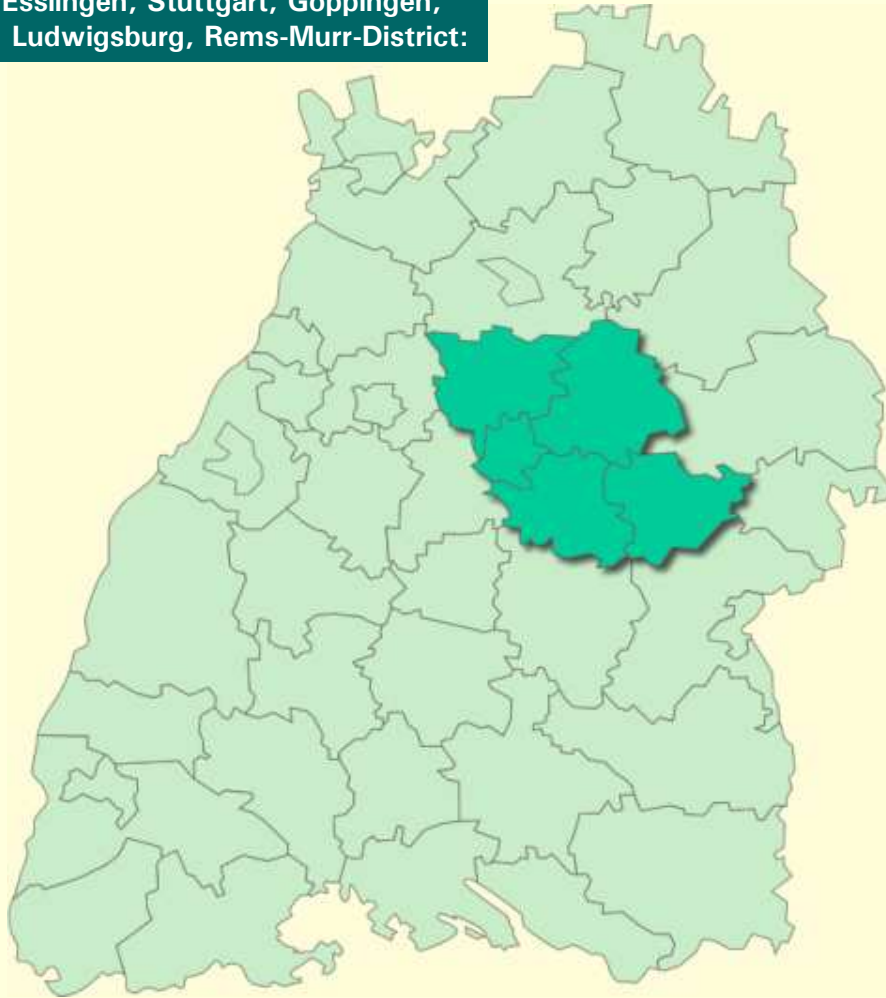
Walter AG, Tübingen

Müller Weingarten AG, Weingarten



# Machine Tools – Regional Centers

**Esslingen, Stuttgart, Göppingen,  
Ludwigsburg, Rems-Murr-District:**



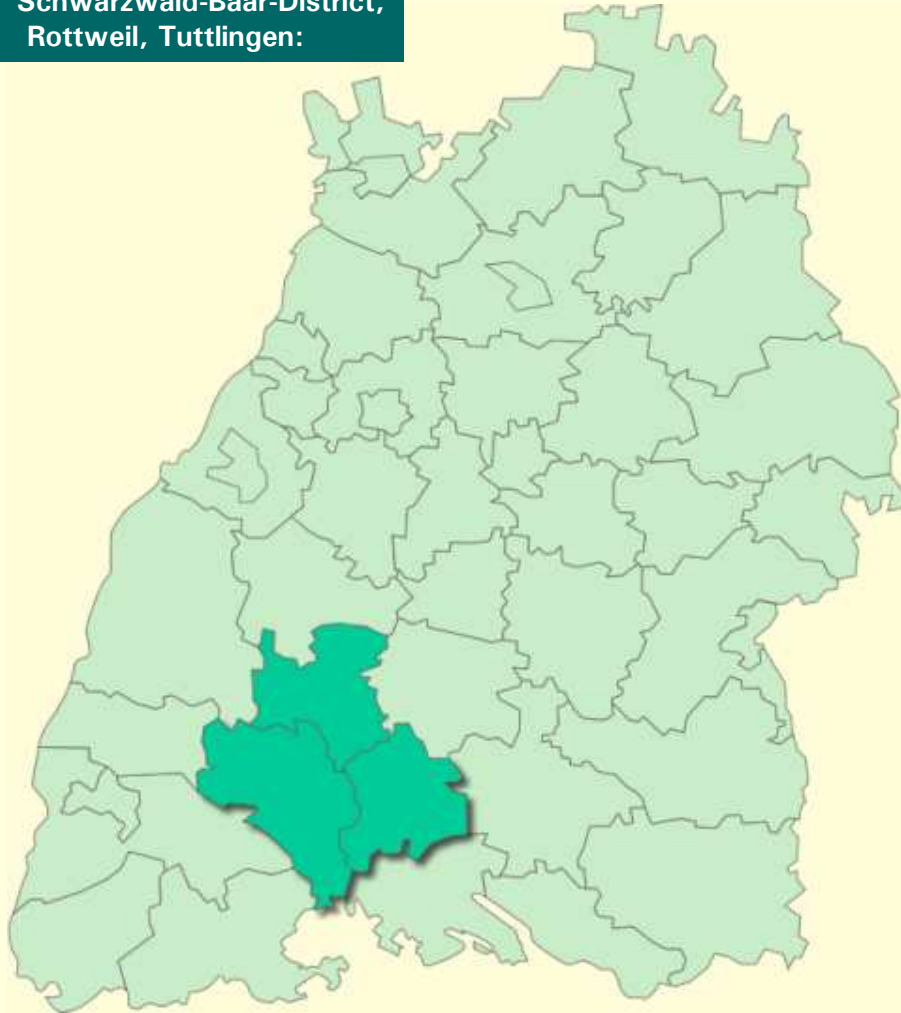
**Esslingen, Stuttgart, Göppingen, Rems-Murr-District,  
Ludwigsburg:**

- Gebr. Heller Maschinenfabrik (Nürtingen)
- INDEX-Werke GmbH & Co. KG (Esslingen)
- Traub Drehmaschinen GmbH (Reichenbach)
- Holzher-Reich Spezialmaschinen GmbH (Nürtingen)
- C. Stiefelmayer GmbH & Co. KG (Denkendorf)
- NAGEL Maschinen- und Werkzeugfabrik GmbH (Nürtingen)
- Kadia Produktion GmbH + Co (Nürtingen)
- Maschinenfabrik GEHRING GmbH & Co. (Ostfildern)
- EMAG Maschinenfabrik GmbH (Salach)
- Schuler Pressen GmbH & Co. KG (Göppingen)
- Boehringer Werkzeugmaschinen (Göppingen)
- STAMA Maschinenfabrik GmbH (Schlierbach)
- Grüner Systemtechnik GmbH & Co. KG (Bad Überkingen)
- TRUMPF GmbH + Co. KG (Ditzingen)
- Cross Hüller GmbH (Ludwigsburg)
- Gleason-Pfauter Maschinenfabrik GmbH (Ludwigsburg)
- TAMPOPRINT AG (Korntal-Münchingen)
- WILHELM BAHMÜLLER Maschinenbau Präzisionswerkzeuge GmbH (Plüderhausen)
- Schuler Hydrap GmbH & Co. KG (Plüderhausen)
- Kelch & Links GmbH (Schorndorf)
- AGIE GmbH (Schorndorf)
- Schaudt Mikrosa BWF GmbH (Stuttgart)
- SCHMIDT-TEMPO (Stuttgart)
- Parat Werkzeugmaschinen GmbH (Stuttgart)
- Dr. Fritsch Sondermaschinen GmbH (Fellbach)



# Machine Tools – Regional Centers

## Schwarzwald-Baar-District, Rottweil, Tuttlingen:

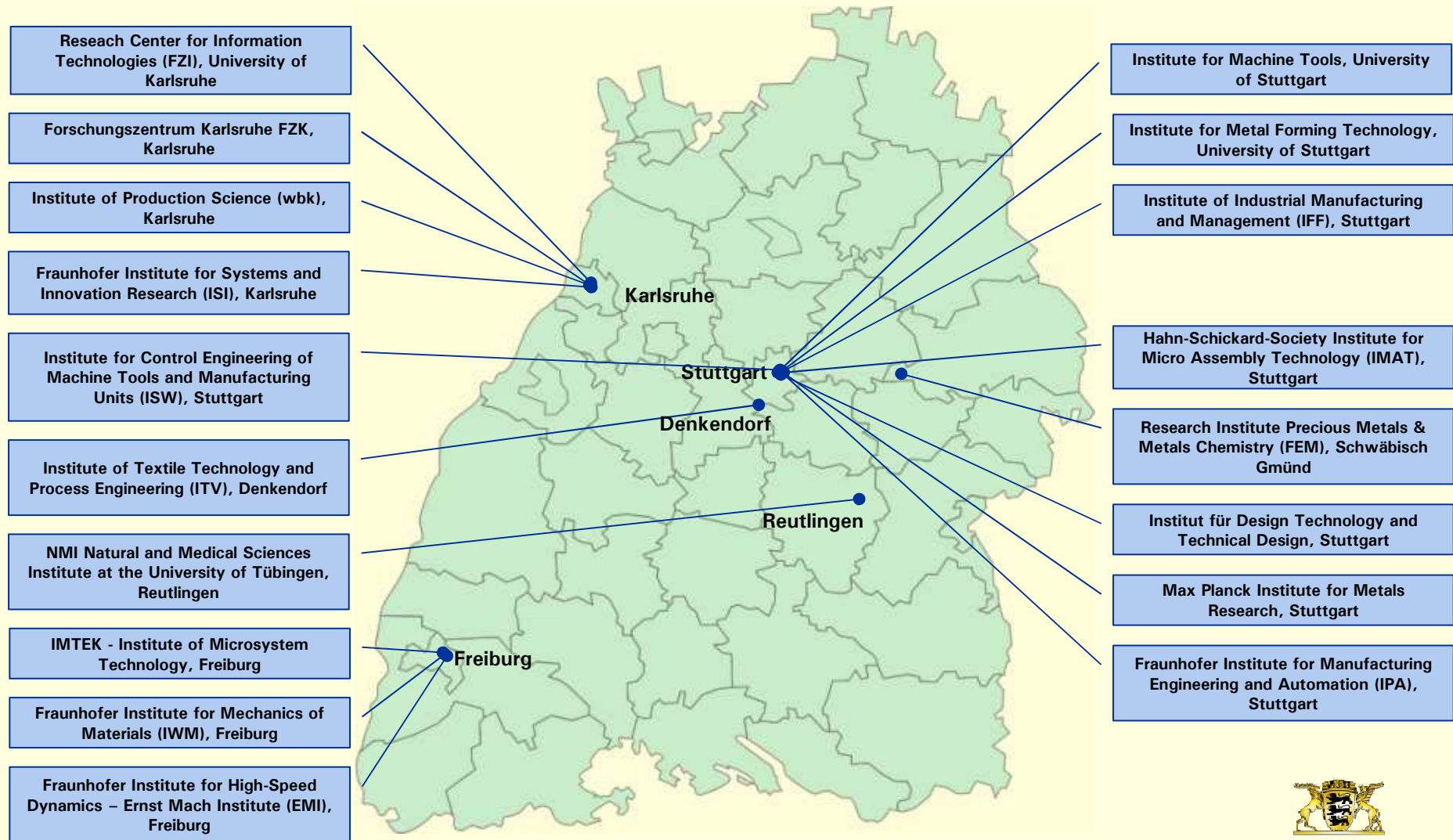


### Schwarzwald-Baar-District, Tuttlingen, Rottweil:

- Schwäbische Werkzeugmaschinen GmbH (Schramberg)
- Mauser-Werke Oberndorf (Oberndorf)
- TRUMPF Laser GmbH + Co. KG (Schramberg)
- EUBAMA - Eugen Bader Maschinenbau GmbH & Co. KG (Rottweil)
- Mikron GmbH Rottweil (Rottweil)
- Vollmer Dornhan GmbH & Co. KG (Dornhan)
- J. G. Weisser Söhne (St Georgen)
- Jos. Koepfer & Söhne GmbH (Furtwangen)
- Schmidt Feintechnik GmbH (St Georgen)
- CHIRON (Tuttlingen)
- HERMLE Maschinenfabrik Berthold Hermle AG (Gosheim)
- Maschinenfabrik Spaichingen GmbH (Spaichingen)
- Haas Schleifmaschinen GmbH (Trossingen)
- August Wenzler Maschinenbau GmbH (Spaichingen)
- SM-Stahl Maschinenfabrik GmbH (Dürbheim)
- Maier Werkzeugmaschinen (Wehingen)
- SHL Seelmann Häring und Lehr Automatisierungstechnik GmbH (Böttingen)
- Hegner Präzisionsmaschinen GmbH (Villingen-Schwenningen)
- Ketterer-Maschinenbau-GmbH (Bad Dürkheim)
- Doosan Machinery (Villingen-Schwenningen)



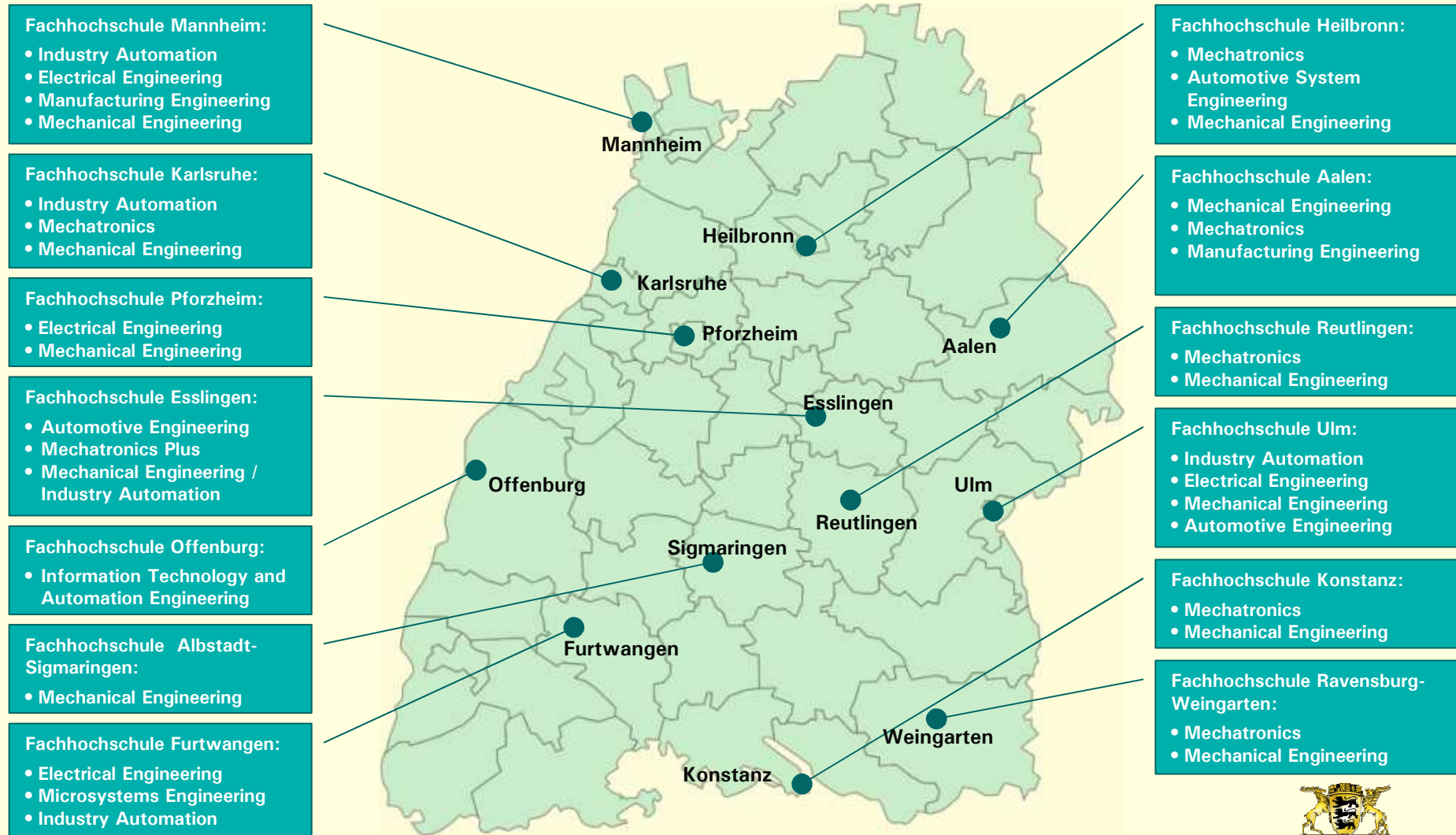
# Machine Tools – Research Institutes



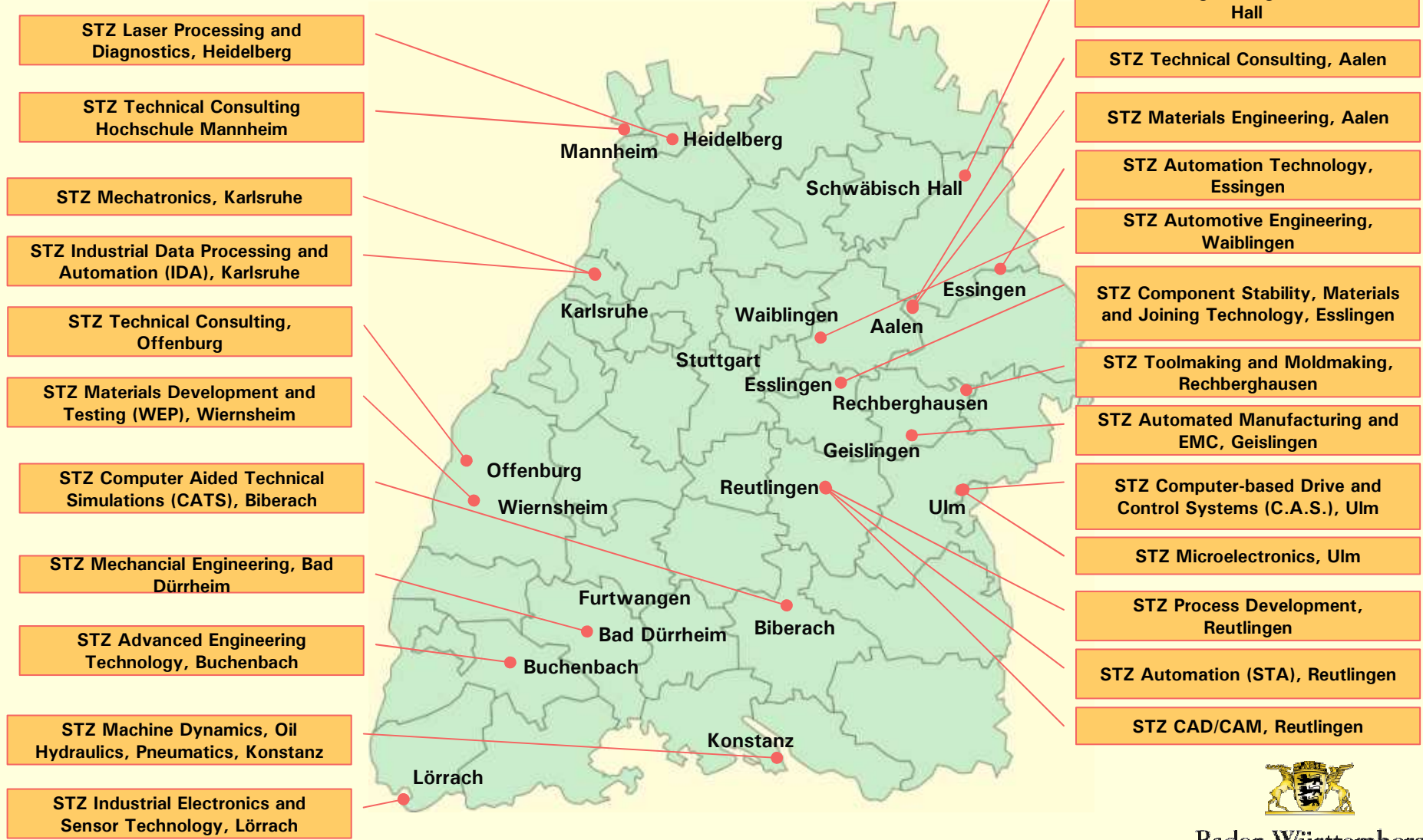
# Machine Tools – Relevant Study Courses (Universities)



# Machine Tools - Relevant Study Courses (Universities of Applied Sciences/Fachhochschulen)



# Machine Tools – Steinbeis Technology Transfercenters (STZ)



# Machine Tools - Research



## **Fraunhofer Institute for High-Speed Dynamics – Ernst Mach Institute (EMI), Freiburg**

<http://www.emi.fhg.de>

The Fraunhofer Institute for High-Speed Dynamics, also known as the Ernst-Mach-Institut (EMI), focuses on the physical and technical aspects of high-speed mechanical and fluid dynamic processes. This includes the experimental and numerical analysis of shock waves in solids, liquids, and gases; fluid-flow and combustion processes; impact and penetration processes over a wide range of velocities from 10 m/s to 10 km/s; the behaviour of structures under shock and impact; the behaviour of elastic media at high strain or high strain rates of dilatation.



## **Fraunhofer Institute for Mechanics of Materials (IWM), Freiburg**

<http://www.iwm.fhg.de>

The Fraunhofer Institute for Mechanics of Materials IWM develops solutions to increase the safety, availability, and lifespan of components and systems ranging from microelectronic devices to power plant components. The Institute develops concepts to make optimum use of new materials as well as cost-effective and environmentally compatible shaping and precision-machining processes.



## **Fraunhofer Institute for Systems and Innovation Research (ISI), Karlsruhe**

<http://www.isi.fhg.de>

With its research and consulting activities, the Fraunhofer-ISI is contributing to solving problems and to the necessary structural changes involved. The preconditions for this are holistic thinking and interdisciplinary and application-oriented research which are traditional strengths of the Institute. The ISI demonstrates the potentials of new technologies, their applications, markets, conditions for diffusion, opportunities and risks. It develops complex and systematic solutions as well as methods and information bases for strategic decision-making processes in industry, science and politics.



# Machine Tools - Research



## **Fraunhofer Institute for Manufacturing Engineering and Automation (IPA), Stuttgart**

**<http://www.ipa.fhg.de>**

Solutions for organizational and technological functions in the production sector of industrial companies form the main areas of research and development work at the Fraunhofer Institute for Manufacturing Engineering and Automation IPA. The Fraunhofer IPA achieves this objective by developing, testing and piloting methods, components and equipment, through to the implementation of complete manufacturing systems and plant. This majority of this work is carried out under contract to industry. The institute also works on projects funded under public-sector research programs.



## **Forschungszentrum Karlsruhe**

**<http://www.fzk.de>**

Forschungszentrum Karlsruhe is one of the biggest science and engineering research institutions in Europe and funded jointly by the Federal Republic of Germany and the State of Baden-Wuerttemberg. Its research and development programs are of public interest and serve peaceful purposes exclusively. They concentrate on the five research areas of Structure of Matter, Earth and Environment, Health, Energy, and Key Technologies. In pursuing these research activities, the Forschungszentrum Karlsruhe cooperates with partners in science and industry. Furthermore, it operates large-scale facilities also for external users.



# Machine Tools - Research



## **Institute of Textile Technology and Process Engineering (ITV), Denkendorf**

<http://www.itv-denkendorf.de>

The institute supports small and medium-sized enterprises (SME) in the solution of research and development tasks within the scope of industrial joint research. Accordingly the individual working fields are orientated to these tasks which in general cover the whole field of textile technology and related fields.



## **Research Institute Precious Metals & Metals Chemistry (FEM), Schwäbisch Gmünd**

<http://www.fem-online.de>

Since 1922 the Research Institute for Precious Metals and Metals Chemistry (**fem**) in Schwäbisch Gmünd / Germany is a well known independent non-university non-profit institution in the field of metallurgy, materials science and surface technology. Main aspects of its work are the application of different coating technologies (electrochemistry / electroplating, anodisation and lacquering of aluminium, PVD and PACVD techniques) in combination with our extensive testing facilities for materials and coatings as well as for materials analyses.



## **Hahn Schickard Society Institute for Micro Assembly Technology (IMAT), Stuttgart**

<http://www.hsg-imat.de>

In close collaboration with the University of Stuttgart's Institute of Time Measurement Engineering, Precision and Microengineering, IMAT conducts research into casings and micro/macro-system interfaces, focusing on plastic housings and molded interconnect devices (MIDs), as well as the development of innovative sensor and actuator systems using hybrid technology with microstructured MIDs.



# Machine Tools - Research



## **Max-Planck-Institut für Metallforschung, Stuttgart**

**<http://www.mf.mpg.de>**

The Max-Planck-Institut für Metallforschung has consistently played a leading role in materials research since its inauguration in 1921. Its research activities comprise theoretical and experimental investigations of synthesis, structure, microstructure and properties of materials. Today, the Institute is well positioned to continue its leading role in modern materials research. Its goal is to create the foundations to better tailor material properties necessary for a given structural or functional application ("materials by design"). To this end, progress is needed on several levels of research and development, ranging from basic questions of atomic and molecular behavior to materials engineering.



## **IMTEK - Institute of Microsystem Technology, Freiburg**

**<http://www.imtek.de>**

The Institute of Microsystem Technology (IMTEK) at the University of Freiburg is unique in Europe. The scientific scope of the institute encompasses nearly all technical fields relevant to the highly interdisciplinary world of microsystem technology. Through the depth and range of our activities, the IMTEK is one of the internationally leading academic research departments in this dynamic and innovative field.



# Machine Tools - Research



## **Institute for Control Engineering of Machine Tools and Manufacturing Units (ISW) University of Stuttgart**

<http://www.isw.uni-stuttgart.de>

The Institute for Control Engineering of Machine Tools and Manufacturing Units was established in 1965. The number and variety of research and development fields of the institute has steadily increased. The main fields are centred around the development and application of control technology and other computer supported methods for automation. The division of the institute in 4 departments and 9 groups reflects the variety of activities.

The Institute caters for both basic research as well as for the application-orientated development activities, which has led to successful cooperation with both public and industrial project partners.



## **Institute of Industrial Manufacturing and Management (IFF), University of Stuttgart**

<http://www.iff.uni-stuttgart.de>

Research at the IFF covers the areas of industrial manufacturing and factory management. This includes on the one hand techniques and methods for the production of both single components and complete products, on the other hand planning, implementation, operating and disassembly of production systems. The laboratory contains various machine tools, coating units and coordinate and surface measuring instruments.



## **Institute for Metal Forming Technology (IFU), Universität Stuttgart**

<http://www.uni-stuttgart.de/ifu>

The IFU's research and development activities center on metal-forming technology - in particular on forging, machine development, hydroforming, and FEM process simulation. International conferences highlighting new developments in forging and sheet-metal forming are organized in collaboration with the Forschungsgesellschaft Umformtechnik mbH (FGU) (metal-forming technology research).



# Machine Tools - Research



## **Institute for Machine Tools (IfW), University of Stuttgart**

<http://www.ifw.uni-stuttgart.de>

At the Institute for Machine Tools (IfW), University of Stuttgart, research projects in the field of construction, optimisation of machine tools, and machining production engineering are carried out by more than thirty scientific employees. The emphases of investigation at the IfW are on the fields of machine tool construction, machining metal and wood working as well as on automatic control and environment-compatible production engineering.



## **Institute for Design Technology and Technical Design (IKTD), University of Stuttgart**

<http://www.imk.uni-stuttgart.de>

With a strong focus on real-world applications, the IKTD conducts research into, and provides courses in, drive technology/gears/transmissions, product-development methods, computer-aided engineering (CAE), and technical design. The institute researches the underlying principles of the design of industrial products, including machine tools.



## **Research Center for Information Technologies at the University of Karlsruhe (FZI)**

<http://www.fzi.de>

FZI was founded in 1985 and is a non-profit contract research organisation that concentrates its efforts on novel information technologies for providers of investment and consumer products, of production or business products and of information services, and supports the development of innovative applications, primarily in engineering, on the basis of recent but already proven techniques. Most important, FZI offers its members a unique interdisciplinary environment that fosters joint research among diverse fields of Informatics, Mechanical and Electrical Engineering.



# Machine Tools - Research



## **Natural and Medical Sciences Institute of the University of Tübingen (NMI), Reutlingen**

**<http://www.nmi.de>**

The NMI is an applied research foundation acting as a non-profit organization. It was founded in 1985 by 12 small and medium enterprises and by the city of Reutlingen. An advisory board which includes representations from the University of Tuebingen, industries and local government supervises the institute. The NMI's principle goal is the transfer of knowledge from basic research into economically relevant applications. The application of new discoveries and methods in Microtechnology and Physics to the areas of Medicine and Biotechnologies has great potential for the development of new products.



## **Institute of Production Science (wbk), Karlsruhe**

**<http://www.wbk-ka.de>**

With almost 80 employees the Institute of Production Science is one of the largest institutes at the University of Karlsruhe (TH) and an established part of the mechanical engineering faculty. Its main activities are centered on education and application oriented research of manufacturing engineering, machine tools, handling technology and production systems.

The broad range of modern equipment provides the science staff and students with the perfect environment to accomplish their theoretical and experimental research projects. Beyond the technology region of Karlsruhe the wbk also work together with industrial partners finding solutions for diverse problems within production technology and developing new methods and processes for tomorrow's production procedures.

