

Fraunhofer Group for Production



The Future Production

The Fraunhofer Group for Production is a research and development partner for the production industry. Based on the latest findings from production and engineering sciences as well as computer science, the Fraunhofer Group for Production offers a range of services that covers the entire product life cycle respectively the entire value chain. Research and industry are closely and interdisciplinary linked. The Fraunhofer Group for Production commands a large amount of technologies and services that make companies fit for the future of production.

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AREAS OF EXPERTISE

Industry 4.0 / Smart Manufacturing	<ul style="list-style-type: none"> ■ Intelligent sensors and system networking (CPS) ■ Intelligence and flexibility of production control ■ Smart system optimisation
Industrial Production Systems	<ul style="list-style-type: none"> ■ Factory planning, automation and optimization ■ Automation and process control systems
Higher Stability Production Processes	<ul style="list-style-type: none"> ■ Process chain design and assessment ■ Optical and tactile systems for in-process and in-line metrology ■ Self-optimizing processes
Logistics and Supply Chain Management	<ul style="list-style-type: none"> ■ Holistic logistics systems and networks ■ Material handling systems technology and information technology ■ Layout planning and optimization
Robotics	<ul style="list-style-type: none"> ■ Planning, realisation and optimization of robotic systems, gripper system and driverless transport systems ■ Human-robot-collaboration
Manufacturing Technologies	<ul style="list-style-type: none"> ■ Production design, development and simulation ■ Integration of generative processes ■ Bionic structures
Production Management	<ul style="list-style-type: none"> ■ Production strategy planning and controlling ■ Quality management, certification and compliance ■ Technology and innovation management
Materials and Components	<ul style="list-style-type: none"> ■ High performance materials, complex structures & biopolymers ■ Production Systems for lightweight components ■ Functional surfaces
Process Engineering	<ul style="list-style-type: none"> ■ Chemical processing and bio-process engineering ■ Energy process technology ■ Catalytic processes ■ Product and process development

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MEMBER INSTITUTES



Fraunhofer Institute for Additive Manufacturing Technologies IAPT

Am Schleusengraben 14, 21029 Hamburg

The Fraunhofer IAPT is a leading institution in the field of additive production, with research priorities in design, process, factory, and digitalization. The focus is on the industrialization of additive technologies which enables your company to produce completely new and resource-efficient products. With us you receive tailor-made solutions which help you to make a competitive start to your additive future.



Fraunhofer Institute for Mechatronic Systems Design IEM

Zukunftsmeile 1, 33102 Paderborn

The IEM is an expert for intelligent mechatronics in the context of industry 4.0. Scientists from mechanical, software and electrical engineering collaborate interdisciplinary for the development of intelligent products, production systems and services. Underlying core competencies are intelligence in mechatronic systems, Systems Engineering and Virtual Prototyping.



Fraunhofer Institute for Factory Operation and Automation IFF

Sandtorstraße 22, 39106 Magdeburg

The IFF is a technology partner for manufacturers and the public sector. The institute researches and develops applied solutions in its fields of research of smart work systems, resource efficient production and logistics, and convergent infrastructures. In the process, its experts rely on their expertise in digital engineering, robotics, measurement and testing, production and logistics process engineering, technology-based assistance and qualification.

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Fraunhofer Research Institution for Casting, Composite and Processing Technology IGCV

Am Technologiezentrum 2, 86159 Augsburg

Fraunhofer IGCV is doing application-oriented research and development in the field of lightweight-casting, fiber-reinforced composites and automated production. More than 80 scientists generate innovations to reinforce the competitive strength of the industry. Their competence and expertise extend from material science via structural mechanics to manufacturing technologies and production.



Fraunhofer Research Institution for Large Structures in Production Engineering IGP

Albert-Einstein-Straße 30, 18059 Rostock

The main scope of IGP covers the fields of production and manufacturing of large structures. On a strong foundation of applied research, concepts for product and process innovations are developed and realized in research and development projects. Those are conducted with our cooperation partners in diverse future branches such as ship and steel construction, energy and environment technology, railway and utility vehicle manufacturing as well as machine and plant construction.



Fraunhofer Institute for Material Flow and Logistics IML

Joseph-von-Fraunhofer-Str. 2–4, 44227 Dortmund

The Fraunhofer IML is said to be the first address in the holistic logistics research and is working on all fields of internal and external logistics. The institute creates solutions in the area of materials handling, warehouse management, supply chain management, simulation supported business and system planning and also traffic systems, closed loop economy, resources logistics, building logistics and e-business.

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Fraunhofer Institute for Manufacturing Engineering and Automation IPA

Nobelstraße 12, 70569 Stuttgart

The institute's research focus is on organizational and technological aspects of production. We develop, test and implement not only components, devices and methods, but also entire machines and manufacturing plants. IPA is working interdisciplinary with the following industries: automotive, machinery and equipment industry, electronics and microsystems, energy, medical engineering and biotechnology as well as process industry.



Fraunhofer Institute for Production Systems and Design Technology IPK

Pascalstraße 8-9, 10587 Berlin

Fraunhofer IPK conducts applied research and development across the whole process spectrum of manufacturing industry – from product development, production processes, maintenance of investment goods, and product recycling to the design and management of manufacturing companies. We also transfer production technology solutions to areas of application outside the industry such as transport and security.



Fraunhofer Institute for Production Technology IPT

Steinbachstraße 17, 52074 Aachen

The IPT combines long time knowledge and experience in all areas of production technology. We offer clients and project partners special and immediately practical solutions for a connected, adaptive production. We understand production not only in individual operations, but consider all production processes and the links between all the elements of the overall process in their entirety – from pre- and product development via production preparation and assembly to the manufacturing.

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MEMBER INSTITUTES



Fraunhofer Institute for Machine Tools and Forming Technology IWU

Reichenhainer Straße 88, 09126 Chemnitz

The IWU is the innovation driver for smart production. In an increasingly digitized working world we understand ourselves as an engine for innovations in the research and development of production technologies. Over 600 employees at our locations in Chemnitz, Dresden and Zittau open up potentials for competitive manufacturing. Our research focuses on components, processes and the associated complex machine systems – the entire, networked factory.



Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT

Osterfelder Straße 3, 46047 Oberhausen

Fraunhofer UMSICHT is a pioneer of a sustainable energy and raw materials management, providing scientific results and transferring them to businesses, society and politics. Together with partners sustainable products, processes and services are developed. We want our developments to be economically successful, socially equitable and sustainable. The balance between these objectives is always at the forefront of our thinking.



Fraunhofer Austria Research GmbH

Theresianumgasse 27, 1040 Wien (Austria)

Fraunhofer Austria was founded at the end of 2008, as the first European subsidiary of the Fraunhofer-Gesellschaft. The division »Production and Logistics Management« (seated in Vienna) addresses, within the leading subject »Holistic Solutions in Production and Logistics«, the question how excellence can be achieved in Operations Management and what value-adding systems of the future should look like.

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