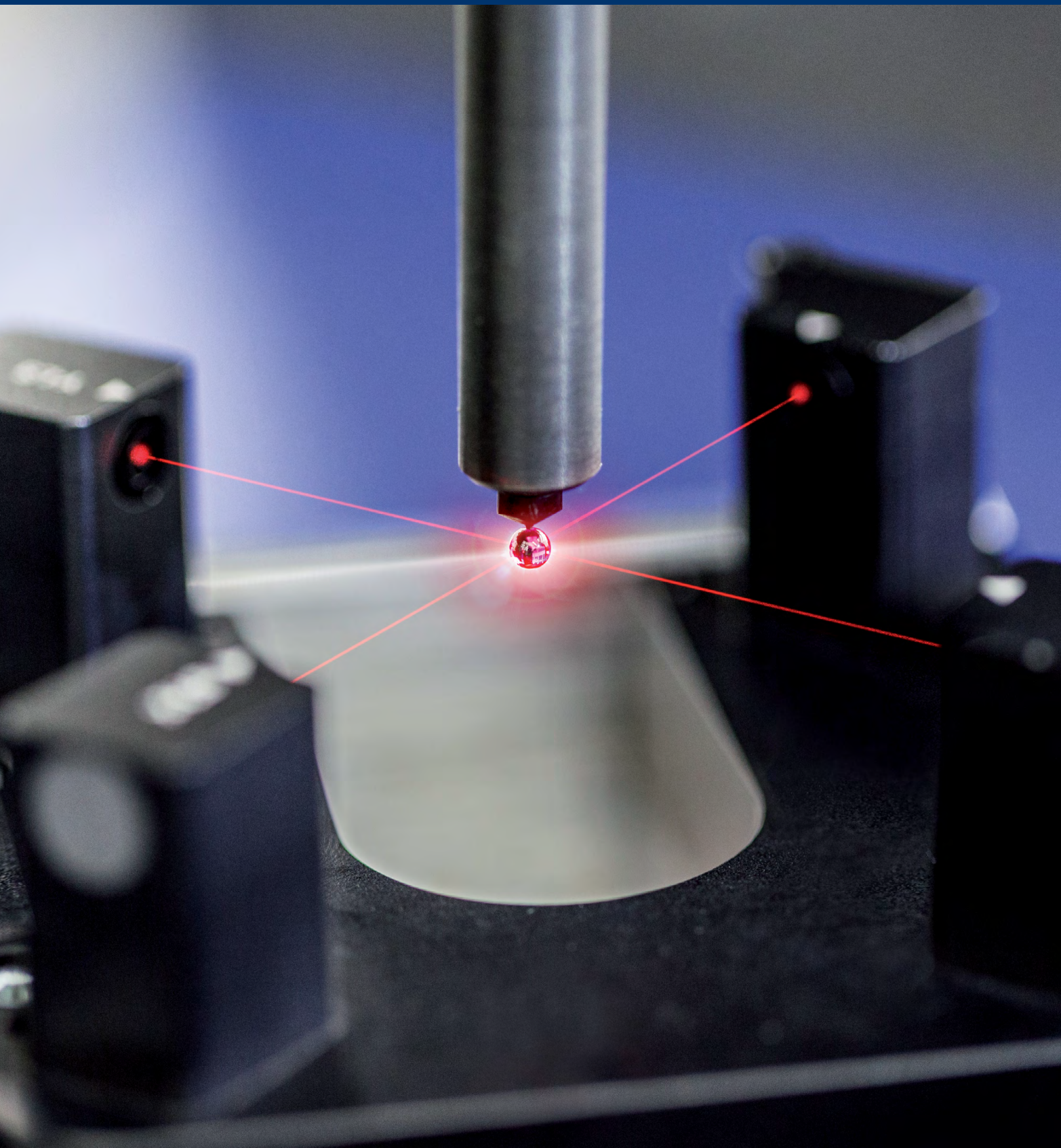
Fraunhofer
IPA

FRAUNHOFER INSTITUTE FOR MANUFACTURING ENGINEERING AND AUTOMATION IPA

SERVICE PORTFOLIO

ULTRACLEAN TECHNOLOGY AND MICROMANUFACTURING

CLEANLINESS TECHNOLOGY
CLEANLINESS-SUITABLE EQUIPMENT AND COMPONENTS
PRECISION ASSEMBLY AND APPLICATION TECHNOLOGY
CLEAN AUTOMATION TECHNOLOGY



FRAUNHOFER.
WE DISCOVER THE FUTURE.

Fraunhofer is the largest research organization for applied research in Europe. We are creative, developing technologies, designing products, improving processes and opening up new horizons. We discover the future. In the field of ultraclean technology and micromanufacturing, our researchers and developers offer a wide range of services based on more than 30 years of experience gained from collaborating with industry and the public sector.

Research and Development

The most important business segment of the Fraunhofer Gesellschaft is contract research. The services offered are directed at industry as well as the state and society. Industrial and service companies of all sizes benefit from our contract research. For small and medium-sized enterprises without their own R&D departments, Fraunhofer is especially important as a source of innovative expertise. We develop and optimize technologies, processes and products for our corporate customers, including the realization of prototypes and small series. Thanks to our flexible interdisciplinary competencies and capacities, the institutes are in a position to meet wide-ranging project demands and develop complex system solutions.

Studies and Analyses

To give our customers sound advice right at the start of their developments, we carry out

– Customized research
– Feasibility studies
– Market observations
– Trend analyses
– Profitability analyses

Consulting and Support

We assist our customers in integrating new technologies into their operations.

– Testing in cleanliness controlled environments and cleanrooms equipped with the latest devices
– Training courses for members of staff in the form of seminars, or on-site
– Usability services, e.g. engineering: consulting and planning services for user-oriented development processes
– Services, also after the introduction of new processes and products

Certification

Within the scope of research services and development issues, you can also make use of the services of our testing facilities and have compliance with required standards checked in accordance with international and national regulations.

ULTRACLEAN TECHNOLOGY AND MICROMANUFACTURING

CLEANLINESS TECHNOLOGY

Manufacturing Environment
Planning Cleanliness Rooms and Cleanrooms | Optimization | Laboratory Concepts

Component Cleanliness
Cleaning | Cleaning Validation | Cleanroom Packaging

Training
Seminars | In-house Training Courses | Technical Cleanliness | Cleanroom Behavior

Cleanliness technology has become essential to almost every branch of industry. Whether it is microelectronics with ever-smaller structures, the automotive industry with functionallyrelevant particles a few hundred micrometers in size or life science industries, where work is conducted in environments that are more than just sterile, cleanliness is imperative to quality. However, cleanliness is often associated with high costs. Our researchers and developers ascertain efficient methods and the associated investment costs.

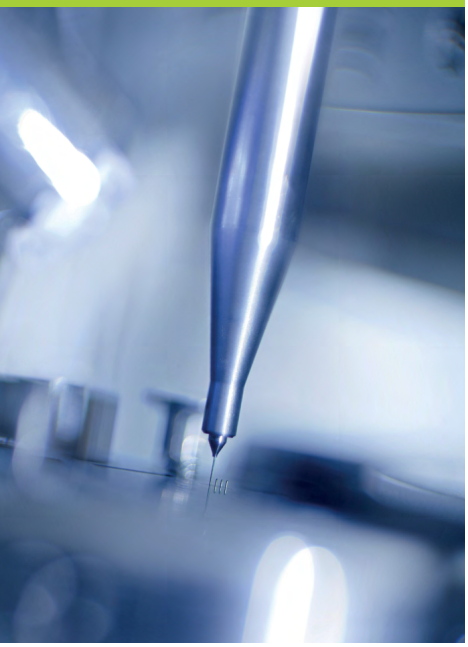
CLEANLINESS-SUITABLE EQUIPMENT AND COMPONENTS

Certification Fraunhofer TESTED DEVICE® | CSM – Cleanroom Suitable Materials®
Equipment | Components | Consumables | Materials

Plant and Equipment Design | Hygienic Design (GMP)
Electronics | Semiconductors | Optics | Display | Medical Technology | Pharmaceutics

CAPE® – Mobile, Flexible Cleanroom Systems
Concept | Implementation | Installation | Acceptance

Particulate, filmic, microbiological or molecular contamination can affect products to such an extent that high rejection rates and quality losses can be expected without suitable measures. Therefore, the specific cleanliness requirements must be met and metrologically verified during the planning and realization of production equipment.



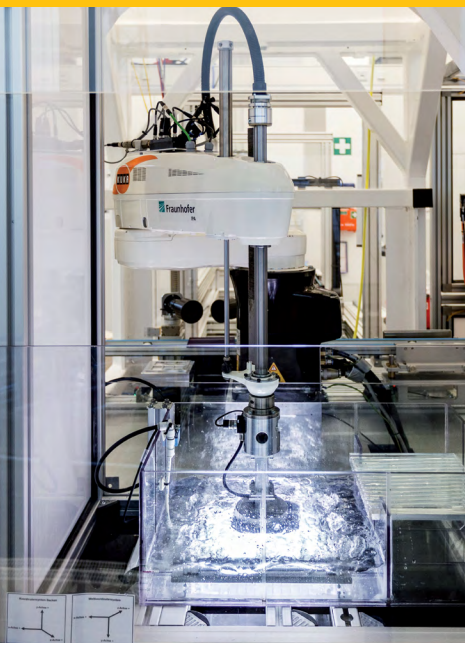
PRECISION ASSEMBLY AND APPLICATION TECHNOLOGY

Handling and Feeding Technology for Micro-Components
Gentle Part Separation | Clean Storage Solutions | Intelligent and Active Workpiece Carriers

Assembly Technology for Micro-Products
High-Precision Application of Viscous Fluids in Low Volume Range | Hybrid Manufacturing by Combination of 3D Printing and 3D Assembly Technologies | Sample and Pilot Assembly

Manufacturing Tools and Equipment Engineering
Adaptable and Scalable Solutions for Manual and Automated Assembly | Miniaturized and Highly Integrated Equipment | Prototyping

Fragile components, sensitive processes and the required highest accuracy are the challenges in micro assembly. Our experts develop application- and industry-specific process and system solutions to integrate micro parts precisely and reliably into your products.



CLEAN AUTOMATION TECHNOLOGY

Handling Systems
Concept Development | Implementation | Selection and Evaluation | PLC and Hardware Optimization | Process Handling in Cleaning Applications

Digitization of Machine Data
Connection of Control Systems to IT Systems | Data Analysis | Standardization of Interfaces | High-speed Data Acquisition

Simplified Information Handling
Use of Mobile Devices | Digital Assistance | Apps | Messaging Systems

Clean, fast and inexpensive - these are the requirements for the production of the future. Efficient and demand-oriented provision of information helps you to better master every challenge. This increases transparency and promotes the exchange of knowledge in a constantly adapting production environment. We support you in discovering and exploiting the potential in your data.

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www.ipa.fraunhofer.de/cleanroom

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