

Fraunhofer IPMS

Short Introduction

Fraunhofer-Gesellschaft

The Largest Organization for Applied Research in Europe



The Fraunhofer-Gesellschaft was founded in Munich on March 26, 1949, as part of a reorganization and expansion of German research infrastructure.

Its mission is application-oriented research for immediate benefit to the economy and to the benefit of society.

Joseph von Fraunhofer

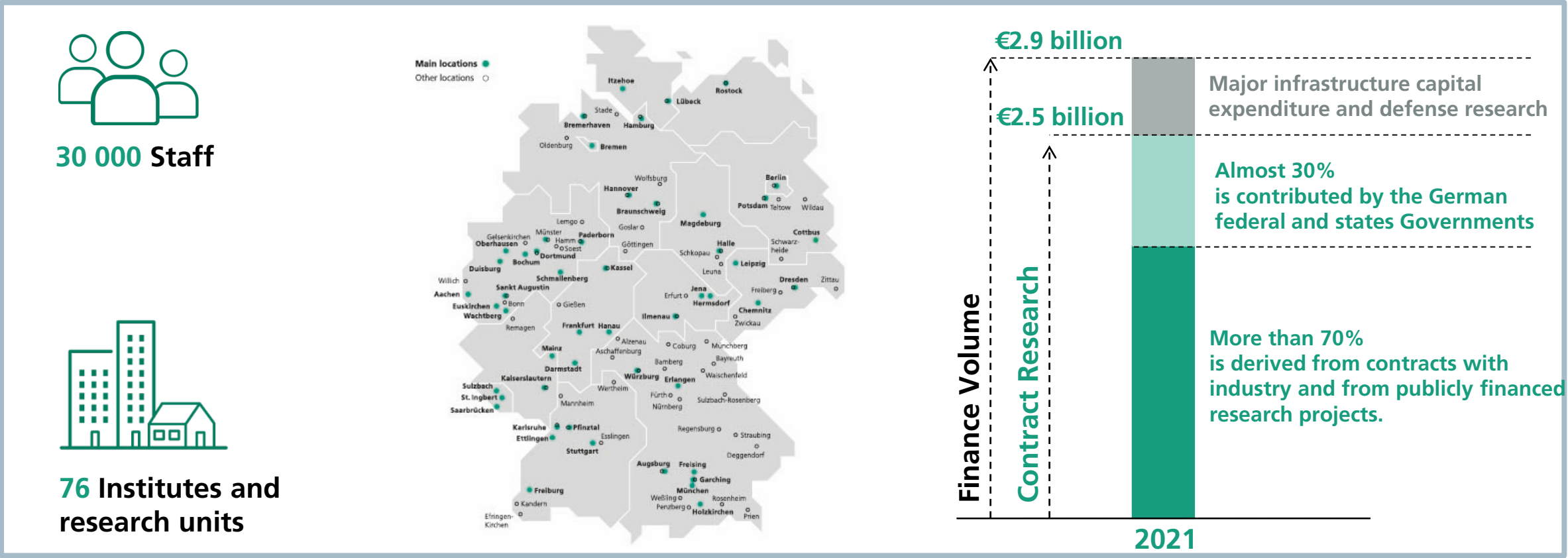
Successful Munich scientist, inventor and entrepreneur Joseph von Fraunhofer (1787-1826) is our organization's namesake.



Fraunhofer-Gesellschaft

At a Glance

Applied research organization prioritizing key future-relevant technologies and commercializing its findings in business and industry. A trailblazer and trendsetter in innovative developments and research excellence.



Fraunhofer-Gesellschaft

International Network



- 8 independent Fraunhofer affiliates
- Active with partners in approximately 80 countries
- Representative Offices and Senior Advisors worldwide leverage networks abroad



Fraunhofer IPMS

Your Partner for Electronic and Photonic Microsystems

Fraunhofer IPMS is a leading international research and development service provider for electronic and photonic microsystems in the application fields of Intelligent Industrial Solutions, Medical Technology and Health, and Improved Quality of Life.



Quality Management

ISO 9001

www.dekraseal.com

At a Glance



- 490 Employees
- 4 Sites



- 51 M€ Annual turnover
- 21 M€ Industry contracts

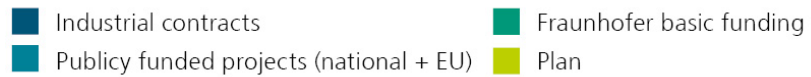
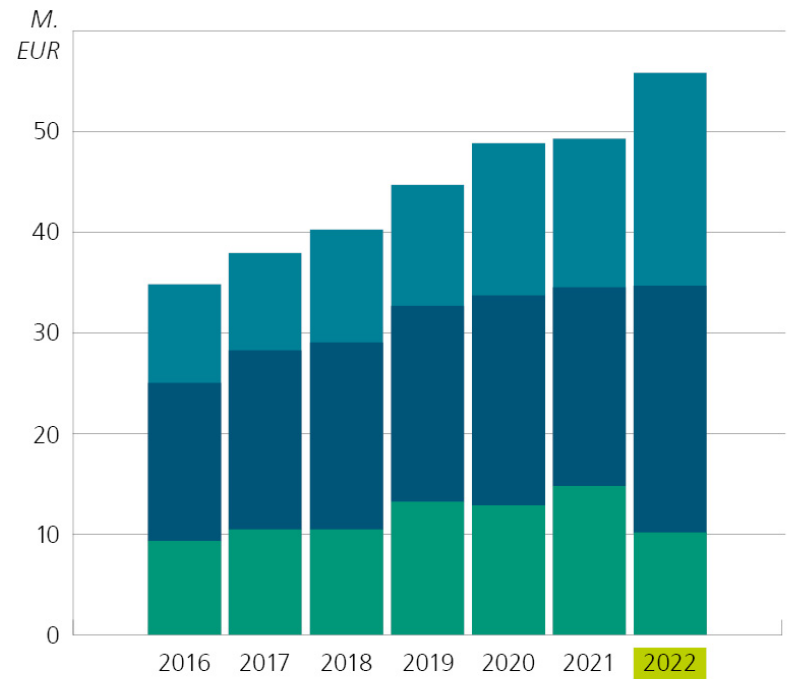


- 200 mm wafer fab for microsystems
- 300 mm wafer fab for micro- and nanoelectronics

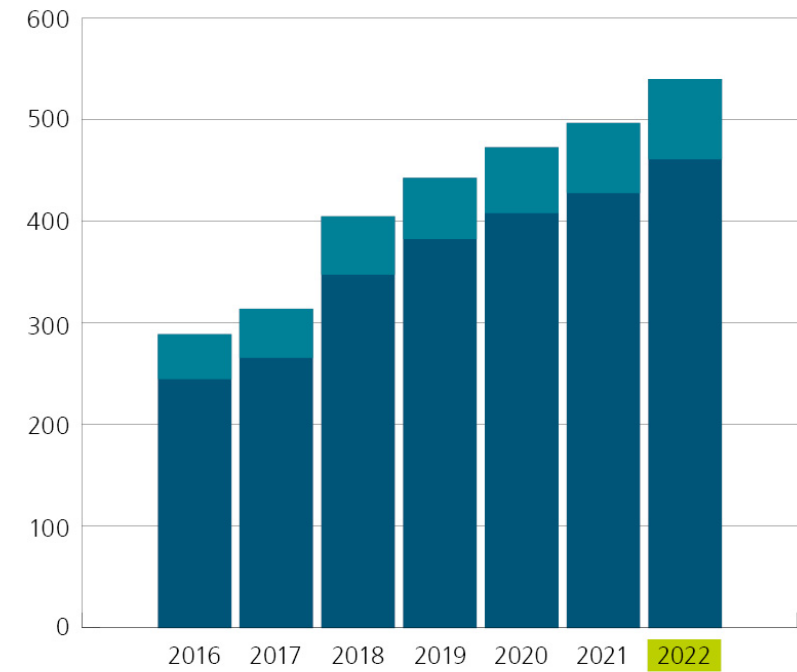
Fraunhofer IPMS

Overview

Budget

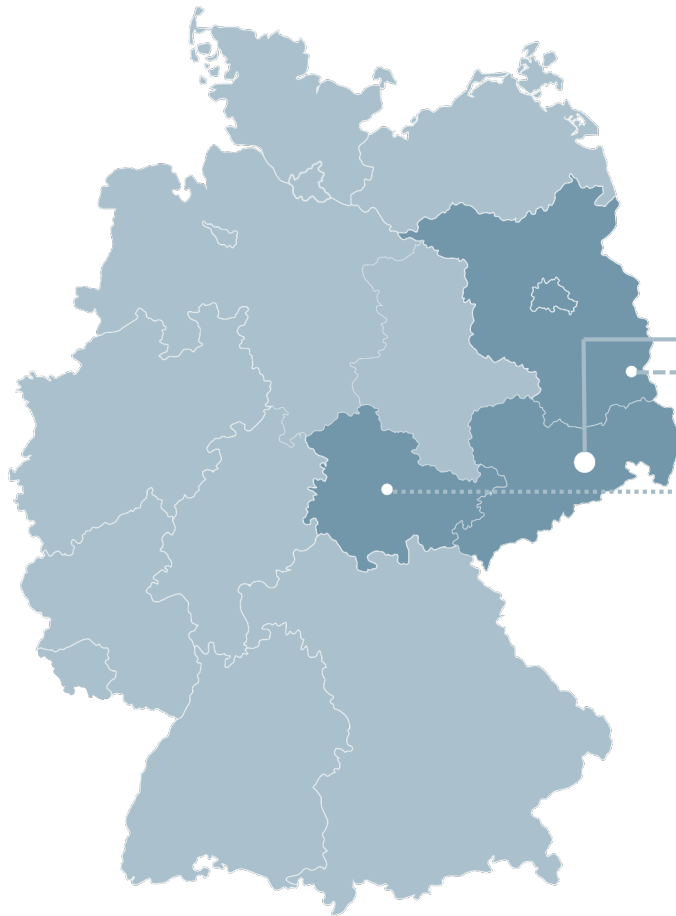


Employees



Fraunhofer IPMS

Sites



Dresden (Headquarter)
»Institute for Photonic Microsystems« IPMS



Dresden
»Center Nanoelectronic Technologies« CNT



Cottbus
»Integrated Silicon Systems« IPMS-ISS



Erfurt
Fraunhofer Center »Microelectronic and Optical Systems for Biomedicine« MEOS

Fraunhofer IPMS

Our Offer



1

Business Development
Feasibility Studies

2

Research & Innovation
Development of Materials, Processes and Devices

3

Engineering
Scaling from Prototype to Qualified Process

4

Fabrication Services
Technology Transfer & Pilot Production

Clean Rooms of Fraunhofer IPMS

200 mm MEMS & 300 mm Micro- and Nanoelectronics



200 mm MOEMS/MEMS

- 1500 m², class 10 (ISO 4)
- 200 mm (8") CMOS compatible wafer line
- 3 shift operations for R&D and pilot fabrication
- Technological parameter supervising system
- MES-based planning and documentation
- ISO 9001:2015 certification

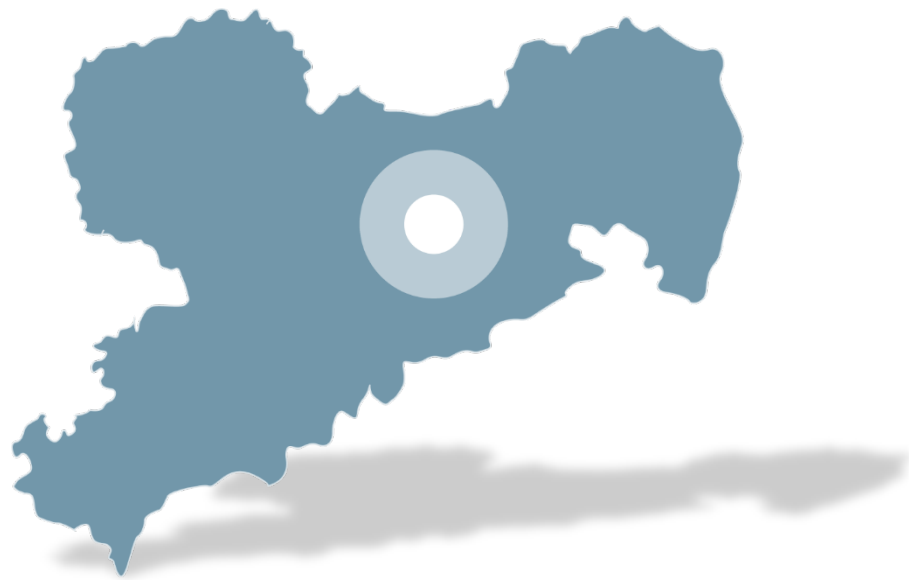


300 mm Micro- and Nanoelectronics

- 2700 m², class 1000 & 400 m² laboratory area
- 300 mm industrial standard equipment
- 80 tools for wafer processing, patterning, metrology & analytics
- Sub-nm characterization and verification
- Full integration into customer process flow in 28 nm technology and beyond

Fraunhofer IPMS

Networks



Regional Collaboration

- We are at the heart of Silicon Saxony, the largest microelectronics network in Europe
- Strong collaboration between research and industry with many chip manufacturers in our close vicinity
- We collaborate with universities and other Fraunhofer Institutes in our local High-Performance Center

National Collaboration

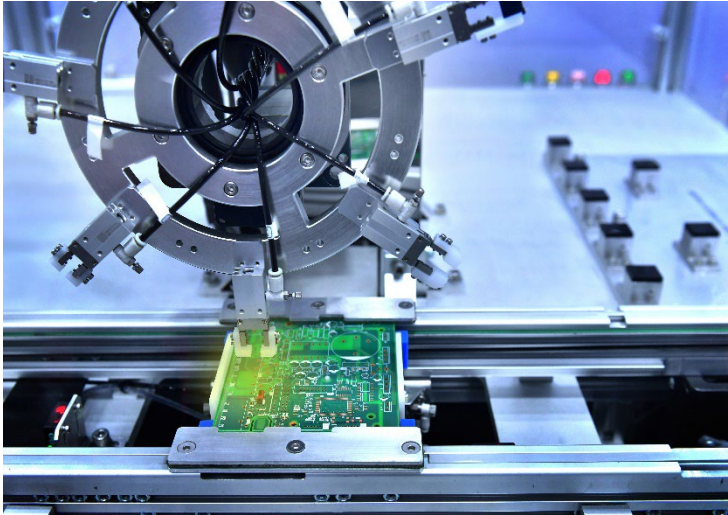
- We are part of Research Fab Microelectronics Germany (FMD)

Worldwide Collaboration

- Member of over 30 networks & professional associations

Fields of Application

Innovative Technologies for the Market



Smart Industrial Solutions

- Logistics
- Production
- Process Technology



Improved Quality of Life

- Mobility & Work
- Sport & Health



Medical & Health

- Prevention & Therapy
- Diagnostics & Sensors
- Medical Imaging

Components & Systems

Focus of Our Research & Development



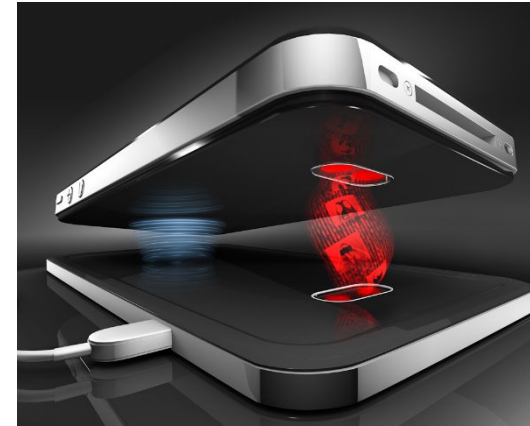
Sensors

- Ultrasonic sensors
- Optical sensors (MEMS scanners, spectrometers)
- Chemical sensors (ISFET, IMS)
- Electric sensors ((L)OFET)



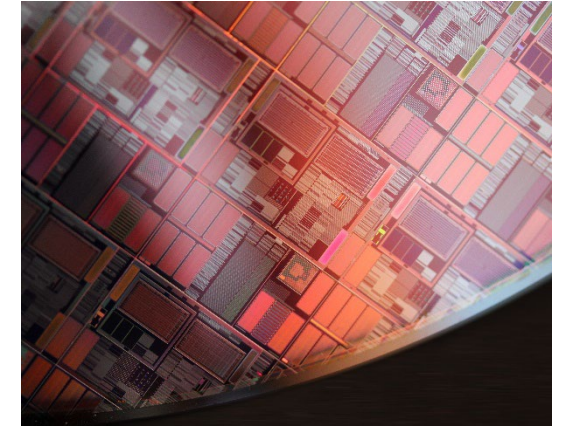
Actuators

- Mechanical actuators (CMUT, NDMUT)
- Optical actuators (MEMS scanners, SLM)



Data Communication

- Li-Fi data transmission
- RFID communication
- IP core design for FPGA and ASIC
- Risc V IP cores

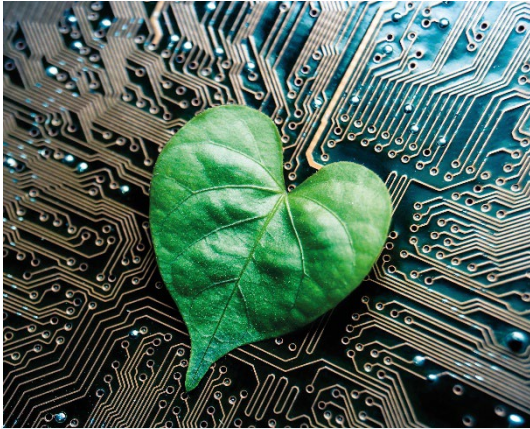


Computing / Data Storage

- Data storage technology
- 300 mm technology modules
- RF characterization
- Energy harvesting

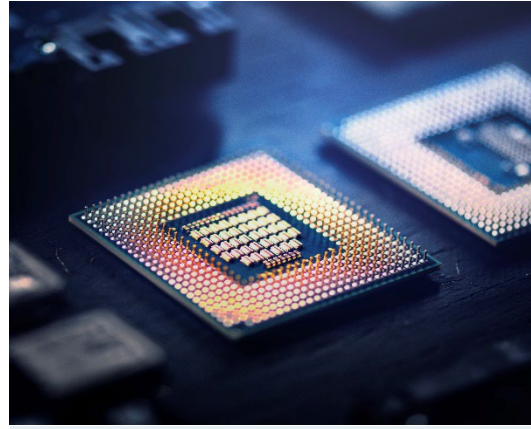
Strategic Research Fields

Research for the Innovations of Tomorrow



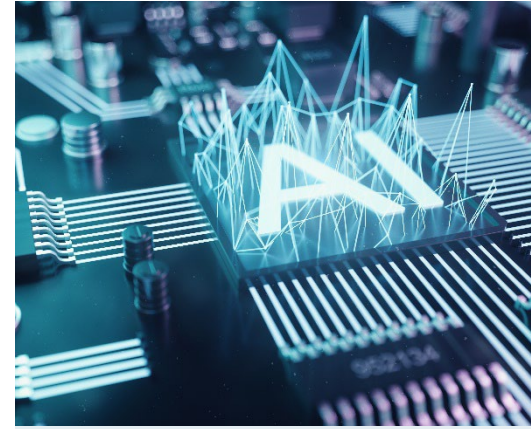
Green ICT

- Sustainable, energy-efficient microelectronics
- Sustainable manufacturing processes in microelectronics production



Quantum Computing

- Scalable manufacturing technologies for silicon qubits
- New materials, processes and integration concepts



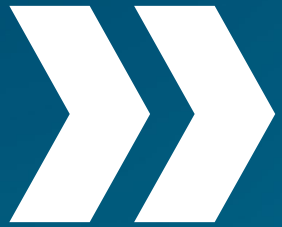
Neuromorphic Computing

- Materials, technologies and hardware solutions for “thinking computers” of the future
- Edge AI solutions



Trusted Electronics

- Trusted manufacturing, assembly and connection technologies
- Trusted components
- Trusted circuits and systems



Why work wit us

In cooperation with Fraunhofer IPMS, we have succeeded in realizing a market lead of 6 years and in achieving international market leadership.«

Heimann Sensor

Follow us on social media

