MICROELECTRONICS & MICROSYSTEMS

Short Introduction

Fraunhofer Institute for Photonic Microsystems IPMS
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FRAUNHOFER GESELLSCHAFT
founded in 1949

JOSEPH VON FRAUNHOFER
(1787-1826)

RESEARCHER

ENTREPRENEUR

SOLUTIONS FOR
TOMORROW AND
BEYOND

BRIDGING
SCIENCE
AND ECONOMY

70 YEARS OF
FRAUNHOFER
70 YEARS
OF FUTURE
#WHATSNEXT
FRAUNHOFER GESELLSCHAFT

THE EUROPEAN INNOVATION POWERHOUSE
- 72 Institutes
- 26,600 employees
- 2.6 Mrd. € turnover (research)

APPLIED RESEARCH TO BENEFIT SOCIETY
- Industry
- Service
- Public

IDEAS TO MARKET
- Professional IP-management
- Leading edge equipment
- From sketch to products
FRAUNHOFER INSTITUTE FOR PHOTONIC MICROSYSTEMS
Dresden, Germany

WORLDWIDE LEADER IN RESEARCH AND DEVELOPMENT SERVICES FOR
ELECTRONIC & PHOTONIC MICROSYSTEMS
TARGETING THE APPLICATION FIELDS:
- INDUSTRIAL SOLUTIONS
- QUALITY OF LIFE
- MEDICAL & HEALTH

450 Employees
42 M€ Annual Turnover
19 M€ Industry Contracts
200 mm Wafer Fab for Microsystems
300 mm Wafer Fab for Microelectronics
FRAUNHOFER IPMS LOCATIONS & CLUSTERS

- »200 mm Photonic Microsystems«
  HEADQUARTER (DRESDEN)

- »300 mm Microelectronics«
  CENTER NANOELECTRONIC TECHNOLOGIES (DRESDEN)

- »Integrated Silicon Systems«
  BRANCH (COTTBUS)

- »Microelectronic and Optical Systems for Biomedicine«
  PROJECT HUB (ERFURT)

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tr>
<td>1992 / 2003</td>
<td>Foundation</td>
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<tr>
<td>2013</td>
<td>300 mm research line integration</td>
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<tr>
<td>2018</td>
<td>Expansion to four locations</td>
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<td>2019</td>
<td>200 mm MEMS cleanroom upgr.</td>
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FRAUNHOFER IPMS – LOCATIONS & CLUSTERS

SILICON SAXONY
- Largest microelectronics network in Europe
- Semiconductor companies: 2,300
- Employees: 65,000
- Clean room area: 52,000 m²
- Turnover: € 14 billion in Saxony

FORSCHUNGSFABRIK MIKROELEKTRONIK (FMD)
- One-stop shop for R&D services in micro / nanoelectronics development
- Cooperation of 13 institutes in Germany
- Employees: 2,000

WORLDWIDE CONNECTED
- Member of over 20 other networks & professional associations
FRAUNHOFER IPMS - CUSTOMER BENEFITS

MINIATURIZED MODULES & SYSTEMS WITH INNOVATIVE FEATURES & FUNCTIONALITIES

CONCEPT TO PRODUCTION & COMPONENT TO SYSTEM SOLUTIONS

WE ENSURE LASTING COMPETITIVENESS OF OUR CUSTOMERS
CORE COMPETENCIES FOR INNOVATIVE SOLUTIONS
Our Value Chain Management

- **BUSINESS DEVELOPMENT**
  - Identification of Customer Needs

- **ENGINEERING**
  - Scaling Prototype to Qualified Process
  - Development of New Components & Systems
  - Technology Transfer & Pilot Production

- **RESEARCH & INNOVATION**
  - Feasibility Studies

- **FABRICATION SERVICES**
  - Materials
  - Processes
  - Devices

- **IDEA**
  - Demonstrate
  - Prototype
  - Services

- **DEVELOPMENT**
  - Materials
  - Processes
  - Devices

- **SOLUTION**
  - Prototypes
  - Services
FRAUNHOFER IPMS

We are certified

- Ensures quality products and services
- Reliable production, scheduling and delivery
- Standards maintained by annual assessments
- Reporting and communication standards