FRAUNHOFER IMS

INNOVATION ON SILICON

Fraunhofer IMS in Duisburg has more than 25 years of experience and proven expertise in microelectronic circuit design and fabrication.

Our silicon solutions can be found in various application areas like satellites, aircrafts, medical implants, automotive, industrial, automation, and consumer electronics.

Full supply chain services provide a seamless path from the first idea through developments to production according to highest quality and reliability levels. This includes longterm support considering our customers product lifetime requirements.

Besides internal and external state-of-the-art CMOS facilities, Fraunhofer IMS offers solutions based on 250°C high-temperature Silicon-on-Insulator processes, MEMS based sensor integration, as well as advanced CMOS postprocessing options.

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Fraunhofer
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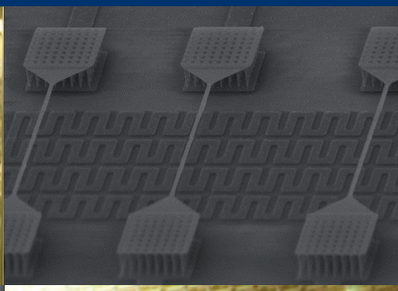
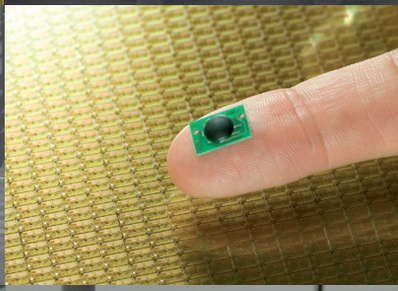
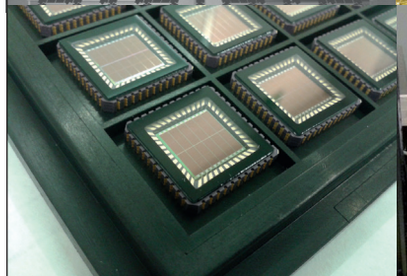
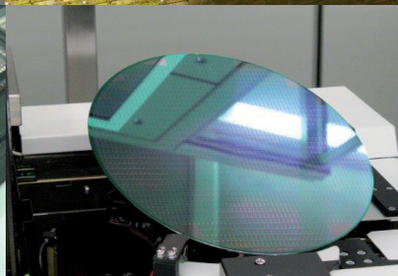
FRAUNHOFER INSTITUTE FOR
MICROELECTRONIC CIRCUITS
AND SYSTEMS IMS

DEVICES & TECHNOLOGIES

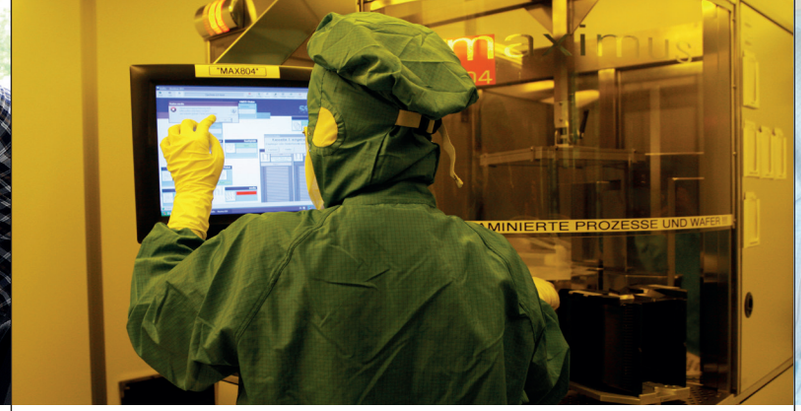
DEVICES AND TECHNOLOGY

Development of new technologies and devices is one of the main activities at Fraunhofer IMS. We operate two cleanrooms (200 mm wafers). One is dedicated to CMOS technology and electronic devices (with automotive certification according to TS16949) and one for MEMS or NEMS processing with the option to use CMOS wafers (from IMS or external) as intelligent substrates (MST-Lab&Fab).

Our services cover the whole range from providing single process steps to customer orientated technology and device development, qualification, and pilot fabrication.

The business field »Devices and Technologies« is the basis for mixed-signal and high temperature CMOS circuits, image sensors with a wide range of wavelengths, infrared bolometers and integrated pressure sensors.

In addition, we also offer device development, process integration, and qualification for semiconductor processes running in our customer's cleanrooms.



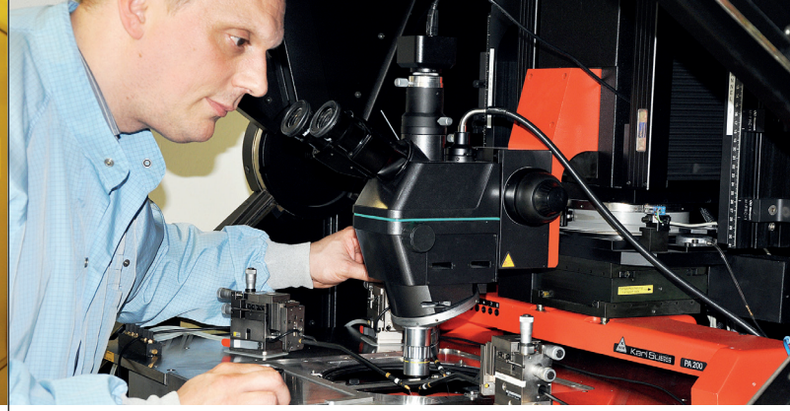
SERVICES AND KNOW-HOW

Services of:

- Process development
- Device development
- Device characterization
- TCAD and multiphysics simulation
- Parameter extraction
- Reliability investigation and qualification
- Feasibility studies, evaluation & consulting
- Installation of customer semiconductor processes in IMS cleanrooms
- Transfer of discontinued processes
- Development and integration in customer's Fab
- Post processing of MEMS on CMOS wafers
- Stand alone MEMS

Know-How in CMOS and MEMS technology for:

- Robust circuits for harsh environments
- Smart power
- Intelligent single chip systems
- Integrated sensors and actors
- Optical devices
- Customer related sensor development



REFERENCES

Processes and Devices:

- 0.35 µm CMOS automotive process
- CMOS process for high temperatures (250 °C)
- CMOS process for high voltage applications
- 0.35 µm Opto process
- X-ray detectors
- Microlenses
- Colour/Band-pass filters
- Special optical device, e.g. SPADs (single-photon Diodes), embedded CCDs, pinned photodiodes
- Non-volatile memories (EEPROM, Flash, OTP)
- High-voltage transistors
- Quartz wafers for diffractive optical elements (DOE)
- Solar cells integrated on top of CMOS
- High-temperature MEMS
- Nano electrodes for sensors
- ALD-protection layer deposition on customer