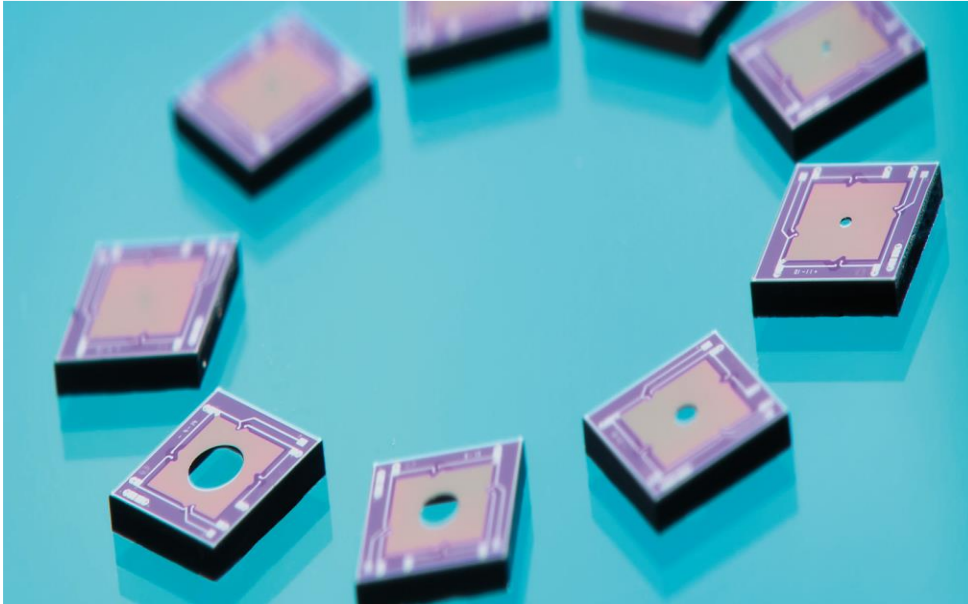


We are pleased to introduce you to Fraunhofer TechFlash - Fraunhofer’s Flash News on latest and exciting technologies. This week’s TechFlash is about **Silicon-based Technologies and Compound Semiconductors at Fraunhofer.**

Fraunhofer Research Fab Microelectronics Germany (FMD) is the world's leading research association for micro- and nanoelectronics applications and systems. It offers new technologies and cross-technology solutions up to a high technical readiness level from a single source for partners in industry and science. As a global driver of innovation and the largest cross-location R&D alliance for microelectronics in Europe, FMD offers a unique diversity of expertise and infrastructure. It bridges the gap between basic research and customer-specific product development.

Silicon-based Technologies



The technology park “Silicon-based Technologies” covers the area of silicon-based microelectronics and microsystem technology. Integrating new material systems for MEMS and NEMS sensors and actuators and combining them with CMOS processes is one of the technology park’s main focuses. These technologies allow the development and pilot manufacturing of intelligent sensor nodes, cyber-physical systems, and hardware-oriented Industrial Internet-of-Things solutions.

The range of technologies is complemented with high-frequency-capable MEMS and SiGe elements. The technology park offers a unique selection of tools for 300 mm wafer diameters, including the development of new types of devices in the Back-End-of-Line (BEoL) segment and system integration by 3D integration

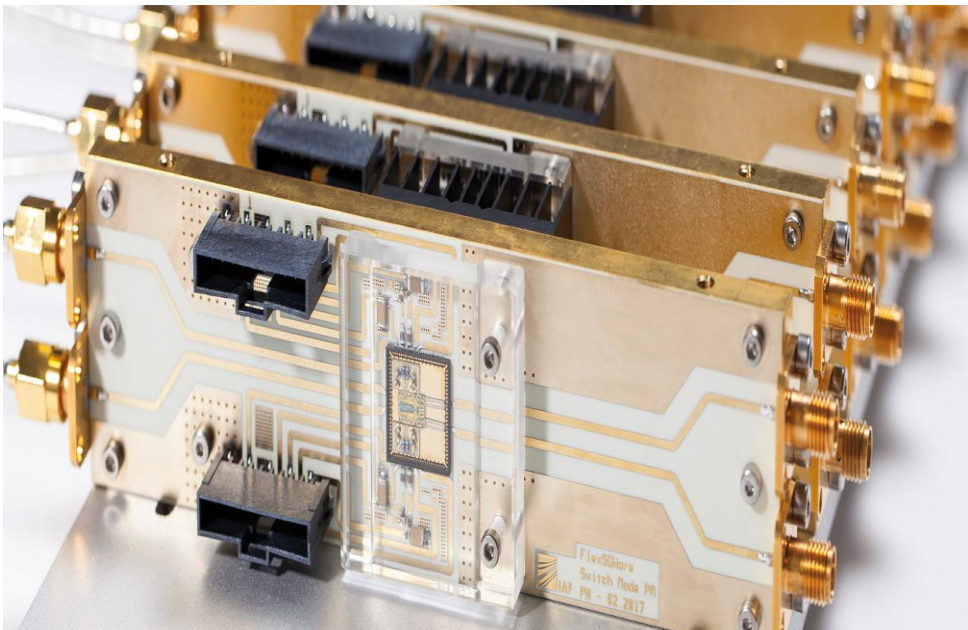
Core Competencies

- Integrating new material systems for MEMS and NEMS sensors and actuators and combining them with CMOS processes
- Development and pilot manufacturing of intelligent sensor nodes, cyber-physical systems, and hardware-oriented Industrial Internet-of-Things solutions.
- High-frequency-capable MEMS and SiGe elements
- 300 mm wafer diameter based Back-End-of-Line (BEoL) devices and system integration by 3D integration technologies.
- Infrastructure and know-how in silicon-based technologies (200 / 300 mm silicon).

We look forward to hearing of your interest.

Yes, I am interested

Compound Semiconductors



The technology park "Compound Semiconductors" enables advanced devices and circuits up to 800 GHz, high-power transistors, and optoelectronic devices. It focuses on III-V wafers for heterointegration with silicon, monolithic integration of compound semiconductors in silicon technology, and processing silicon carbide (SiC) and gallium nitride on silicon (GaN-on-Si), allowing practical application of these innovations.

Additionally, the development of special substrates such as silicon carbide (SiC) and aluminium nitride (AlN) required for next-generation power devices is driven in this technology park. Other new developments such as power electronics based on the semiconductor gallium oxide (GaO) or semiconducting diamond are being pursued well ahead of time.

Core Competencies

- High Frequency Devices and Circuits
- Optoelectronic Devices for Data Communication
- Integration of III-V Materials on Silicon
- Wide-bandgap Power Electronics
- Clean room with (200 mm GaN-on-Si) line

We look forward to hearing of your interest.

Yes, I am interested

About Fraunhofer-Gesellschaft:

Founded in 1949, the Fraunhofer-Gesellschaft based in Germany is the world’s leading applied research organization. It offers contract-based R&D services for specific industry demand, application-oriented technology development from proof-of-principle up to market-readiness across the value chain and offers technical consultancy and feasibility studies to nearly all the industry sectors. The Fraunhofer-Gesellschaft currently operates 76 institutes and research units throughout Germany. Over 30,800 employees, predominantly scientists and engineers, work with an annual research budget of €3.4 billion. Fraunhofer generates €3 billion of this from contract research. Our global footprint is very strong, with offices and research centres in the USA, Europe and Asia. Some of our renowned innovations are the MP3 software, white LED's and the smallest of cameras. Fraunhofer has been a long-time trusted innovation partner in India, collaborating with some of the major players in the fields of Material Science, Energy, Environment, Automotive, Electro-mobility, Production Technology, Microelectronics and Smart Cities, working with Industry, Government and Public Sector.

Kindly contact Mr. Aditya Fuke, Senior Manager – Strategic Projects, Smart Cities & IoT at Fraunhofer Office India for further details.

Ms. Anandi Iyer
Director
Fraunhofer Office India
Website: www.fraunhofer.in
www.fraunhofer.de
www.forschungsfabrik-mikroelektronik.de

Mr. Aditya Fuke
Senior Manager – Strategic Projects, Smart Cities & IoT
Fraunhofer Office India
e-mail id: aditya.fuke@fraunhofer.in