

Fraunhofer Institute for Microelectronic Circuits and Systems IMS

> PRESS RELEASE 18 September 2024 | |PAGE 1 OF 2

PRESS RELEASE

Fraunhofer IMS Announces Advanced Photonic Integration Capabilities and Invites Participation in Engineering Runs

Duisburg, 18.09.2024 – Fraunhofer IMS, the competence center for microelectronics and smart sensor systems within the Fraunhofer-Gesellschaft, is excited to announce its advanced capabilities in photonic integrated circuits (PICs) on a 200 mm wafer manufacturing environment.

The IMS facilities are tailored for low-volume R&D and pilot manufacturing, ensuring flexibility and scalability for various projects.

State-of-the-Art Photonic Platform

The Fraunhofer IMS state-of-the-art silicon nitride (SiN) based photonic platform supports lowloss, broad-wavelength applications. This platform is enhanced with the opportunity of novel quasi-monolithic integration allowing for a vast range of waveguide materials, including, for example, SiN, tantalum pentoxide (Ta2O5), covering visible to mid-infrared wavelengths from 370 nm to 3 μ m. Current photonic components include couplers, waveguides, and interferometers, with the option for custom designs.

Fraunhofer IMS offers strong support for technology, device, and circuit simulations, considering packaging and system-level needs. The experienced team ensures high-quality outcomes throughout the development.

With expertise in microelectronics, micro-electromechanical systems (MEMS), and photonics, Fraunhofer IMS focuses on post-CMOS integration of PICs for smart sensor systems. This includes working with external foundry wafers for applications in optical computing, biosensors, and on-chip quantum photonics.



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> PRESS RELEASE 18 September 2024 | |PAGE 2 OF 2

> > _____

Invitation to Innovate

Fraunhofer IMS invites participants to engage in engineering runs starting Q1 2025 to create their own PIC designs in a high-quality clean room. This opportunity is ideal for innovators looking to bring their photonic designs to life with the support of our cutting-edge facilities and expertise.

For further information and to participate in our engineering runs, please visit us at VISION 2024 in Hall 10, Booth E76.

Or contact Technology Services (sales@ims.fraunhofer.de).

About Fraunhofer IMS

Smart Sensor Systems for a safe, secure, and sustainable future: In numerous state-of-the-art research laboratories, Fraunhofer IMS works with more than 250 talented scientific employees and students on innovative microelectronic solutions. As a trusted research and development partner for industry, the institutes' goal is to develop customized sensor systems for your specific needs in the areas of biomedical sensors, optical systems, open source semiconductors, embedded AI, technology services, and even quantum technology. The teams in the four business units – Health, Industry, Mobility, and Space and Security – are committed to implementing outstanding and versatile microelectronics that can be utilized across all your projects. For example, these solutions feature high integration capability, enormous energy efficiency and reliable functionality even under harsh conditions.

www.ims.fraunhofer.de/en.html

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