

PRESS RELEASE

PRESS RELEASEAugust 14, 2025 || Seite 1 | 4

20 Years of Center Nanoelectronic Technologies (CNT) – Backbone of German Semiconductor Research Celebrates Anniversary

The Center Nanoelectronic Technologies (CNT) of the Fraunhofer Institute for Photonic Microsystems (IPMS) is celebrating its 20th anniversary this year. Since its founding in 2005, it has developed into a pillar of applied semiconductor research in Germany and Europe. With its unique research cleanroom and equipment adhering to the 300-mm wafer industry standard, CNT is unparalleled in Germany and serves as a central innovation driver for the microelectronics industry.

CNT is celebrating its anniversary today with a ceremonial event. Saxony's Minister President Michael Kretschmer highlights the importance of CNT: „With its excellent work, CNT makes a decisive contribution to the international competitiveness of Silicon Saxony as a leading microelectronics location in Germany and Europe. The current situation in particular shows how important technological sovereignty and independent supply chains are in Europe. Our common goal must be to keep Germany and Europe at the forefront of technology. CNT will continue to play a central role in this in the coming years: with bright minds, bold ideas, and strong partners at its side.“

Manfred Horstmann, General Manager and Senior Vice President at GlobalFoundries Dresden, the CNT's largest industrial partner, adds: “CNT is a strategic research partner for us. The proximity to a 300 mm research cleanroom at industrial standards enables rapid innovation cycles and targeted technology development – a real competitive advantage for the entire Dresden microelectronics cluster.”

Paving the Way for Technology Transfer and Future Innovation

CNT's success story began in 2005 as a public-private partnership between Fraunhofer, Infineon, and AMD. Infineon, then still under the umbrella of its parent company SIEMENS, operated the world's first 300 mm plant in Dresden, becoming a pioneer in global semiconductor manufacturing. CNT worked exclusively for the two industry partners from the start, establishing a direct link between cutting-edge research and industrial application, enabling rapid innovations in production.

In the aftermath of the 2009 financial crisis, CNT lost one of its two industrial partners. As a result, exclusive research under the PPP model came to an end. CNT opened up to research collaborations with new national and international customers, following the Fraunhofer model. In 2013, CNT was integrated into Fraunhofer IPMS as a business unit.

Redaktion

Dr. Anne-Julie Zichner | Fraunhofer Institute for Photonic Microsystems IPMS | Phone +49 351 8823-2604 | Maria-Reiche-Str. 2 | 01109 Dresden, Germany | www.ipms.fraunhofer.de | anne-julie.zichner@ipms.fraunhofer.de

FRAUNHOFER INSTITUTE FOR PHOTONIC MICROSYSTEMS IPMS

Today, CNT handles projects with more than 100 industrial partners, including BASF, Sony, X-FAB, and GlobalFoundries. With the EMMA project, where CNT and GlobalFoundries developed innovative materials, processes, and devices for the energy-saving FDX technology, CNT secured the largest industrial contract in the history of the Fraunhofer-Gesellschaft.

PRESS RELEASEAugust 14, 2025 || Seite 2 | 4

With investments of around €140 million in state-of-the-art equipment, CNT is now Germany's most important 300 mm research facility at an industrial scale. Alongside Fraunhofer IZM-ASSID, which focuses on packaging and system integration technologies, the institutes cover the entire value chain in 300 mm microelectronics, laying the groundwork for high-tech research in future technologies within the state of Saxony.

Securing the Location – Securing the Future

A key milestone in recent years was the successful relocation of CNT from the Infineon site to the former Plastic Logic site. Thanks to support from the Free State of Saxony, the German Federal Ministry for Research, Technology and Space (BMFTR), and the Fraunhofer-Gesellschaft, a new high-performance location was established – now home to Germany's largest research cleanroom.

The new capacities enable not only classic semiconductor research but also entirely new fields: CNT is now actively involved in future-oriented areas like quantum computing, neuromorphic computing, and AI hardware. In addition, the new site enables development of forward-looking technologies such as chiplet integration in 2.5D and 3D, which CNT explores as part of the APECS pilot line.

Rooted in Saxony – Connected Across Germany and Europe

As part of the Research Fab Microelectronics Germany (FMD) and the Fraunhofer Group for Microelectronics, CNT works closely with Saxon and European partners. Strong partnerships exist with imec (Leuven) and CEA-LETI (Grenoble) to consolidate European research capabilities. Projects like "PREVAIL", aimed at creating a European Testing and Experimentation Facility (TEF) for Edge AI, showcase this cross-border cooperation.

"CNT's role as an industry-oriented research partner is and remains essential for Saxony, Germany, and Europe. CNT exemplifies the fusion of cutting-edge research, industrial relevance, and European collaboration. In an era of increasing geopolitical challenges, this combination is key to achieving technological sovereignty," says Prof. Dr. Harald Schenk, Director of Fraunhofer IPMS.

FRAUNHOFER INSTITUTE FOR PHOTONIC MICROSYSTEMS IPMS

Prof. Holger Hanselka, President of the Fraunhofer-Gesellschaft, adds: "For twenty years, Fraunhofer IPMS has been driving application-oriented research on 300 mm wafers at the Center Nanoelectronic Technologies CNT, making a significant contribution to the competitiveness and future viability of chip manufacturers, suppliers, device makers, and R&D partners. The 300 mm industrial standard is vital for more efficient chip production and thus for faster transfer of research results to industry. With its broad range of technology developments and services, CNT plays a central role as an innovation engine for the German semiconductor industry. My warmest congratulations on the anniversary!"

PRESS RELEASE

August 14, 2025 || Seite 3 | 4

Images



The Center Nanoelectronic Technologies of Fraunhofer IPMS.

© Fraunhofer IPMS



Ceremony marking 20 years of CNT – from left to right: Dr. Wenke Weinreich, Division Director Center for Nanoelectronic Technologies at Fraunhofer IPMS; Prof. Dr. Hubert Lakner, former

Director of Fraunhofer IPMS; Dr. Lukas Gerlich, Bosch & alumnus; Dr. Thomas Oszinda, Siltectura & alumnus; Dr. Manfred Horstmann, General Manager and Senior Vice President at GlobalFoundries; Dr. Katja Steidel, AMTC & alumna; Dr. Maximilian Drescher, GlobalFoundries & alumnus; Saxon Minister President Michael Kretschmer; Dr. Frank Kromer, Digital Policy Spokesperson for the CDU faction in the Saxon State Parliament; Prof. Dr. Harald Schenk, Director of the Fraunhofer IPMS; Albrecht Pallas, Fourth Vice President of the Saxon State Parliament (SPD); Saxony's Minister President Michael Kretschmer; Dr. Axel Preusse, Senior Manager at Bosch

About Fraunhofer IPMS

Fraunhofer IPMS is a leading international research and development service provider for electronic and photonic microsystems in the application fields of Smart Industrial Solutions, Bio and Health, Mobility as well as Green and Sustainable Microelectronics. Research focuses on customer-specific miniaturized sensors and actuators, MEMS systems, microdisplays and integrated circuits as well as wireless and wired data communication. Services range from consulting and design to process development and pilot series production. With the Center Nanoelectronic Technologies (CNT), Fraunhofer IPMS offers applied research on 300 mm wafers for microchip producers, suppliers, device manufacturers and R&D partners.