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Microelectronics and Systems Congress 2027

Progress for Humanity

Technologies for Sustainability, Health and Quality of Life

Musik- und Kongresshalle Lübeck
October 25 – 27, 2027
www.microelectronics-systems-congress.de

Call for Papers



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Organisers: VDE VDI GMM VDI VDE IT

Welcome Words

When Does Innovation Become Progress for Humanity?

Innovation describes the ability to create something new. Progress answers the more important question: What is that new development for?

Few terms are used as frequently today as innovation. In politics, business, and research, it is often regarded as a value in itself. Yet novelty alone is not enough. Even usefulness by itself is not a sufficient criterion for progress. Technologies may become more efficient, faster, or more powerful without automatically contributing to a better future.

Progress begins where technological developments help address the major challenges of our time. The key question, therefore, is not what is technically possible, but what benefit an innovation creates for people and society.

This guiding principle lies at the heart of the Microelectronics and Systems Congress 2027. Sustainability, health, and quality of life are not merely application areas for modern technology. They are the benchmarks against which progress must ultimately be measured. Science and technology realize their true value only when they help improve people‘s living conditions and promote responsibility toward future generations.

Microelectronics and Microsystems Engineering: Driving Today‘s Progress

Microelectronics and microsystems engineering are among the defining enabling technologies of our time. They provide the foundation for many of the developments that currently shape public attention, from digitalization and the energy transition to artificial intelligence and quantum technologies. Yet even the most spectacular applications do not emerge in isolation. They are built upon decades of research and development in microelectronics, sensor technologies, system integration, and advanced manufacturing.

Technological progress does not depend solely on research institutions, companies, or funding programs. Equally important are the people who develop these technologies. Against the backdrop of a growing demand for highly skilled professionals, education and talent development within our field have become key challenges for the future.

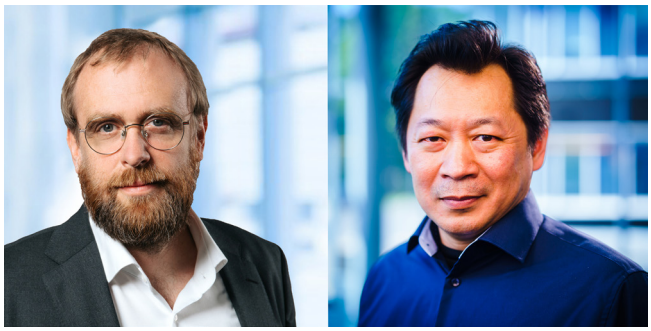
In the tradition of the MikroSystemTechnik Kongress, we view this congress as a platform for academia, industry, and emerging talent. Under its new name, the Microelectronics and Systems Congress 2027 embraces new topics, perspectives, and partners while remaining firmly rooted in its heritage. We look forward to welcoming both long-standing companions and new members of our community.

An Invitation to Lübeck

We are delighted to welcome you to the Microelectronics and Systems Congress 2027 in Lübeck. Located in the heart of Northern Germany, Lübeck is part of a region that combines technological excellence with an exceptional quality of life. Hamburg and Schleswig-Holstein are home to innovations in healthcare, energy technologies, and sustainable development, while offering a living environment that has made Northern Germany one of the most attractive regions to live and work in.

We look forward to sharing inspiring days of exchange and collaboration with you in the Hanseatic city of Lübeck, bringing together scientific discussion and personal interaction while enjoying the maritime spirit and open horizons of Northern Germany. Between tradition and future, between Hanseatic composure and technological dynamism, the region provides an exceptional setting for new ideas, new partnerships, and many stimulating conversations.

Prof. Fabian Lofink and Prof. Hoc Khiem Trieu
Conference Chairs 2027



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Conference Topics

1 Chip Design, EDA & Compute Hardware

- ASIC/SoC
- Analog/Mixed-Signal/RF-Design
- HW-SW-Co-Design
- EDA
- Open-Source-Designflows
- PDKs
- AI-powered Design
- Design for Test/Security/Reliability
- AI-Accelerator
- Neuromorphic Architectures
- Edge AI
- In-/Near-Memory-Computing
- Special Processors
- Computing Units for Robotics

2 Materials, Processes & Manufacturing (Lab to Fab)

- New Materials from 0D to 3D
- Building Component Device Concepts
- Process Technologies
- Modelling and Simulation
- Equipment and Precursor Materials.
- Prototyping
- Pilot Lines
- Process Qualification
- Design-to-Manufacturing
- Industrial-scale Production
- Foundry- and Infrastructure Access

3 Advanced Packaging & Heterogeneous Integration

- Chiplets
- 2.5D/3D-Integration
- Integration Technologies
- Packaging-Technologies
- Interposer
- Wafer-Level Packaging
- Co-Packaged Optics
- Thermal Management
- Packaging for High-Performance Computing Systems

4 Sensors, Actuators & Intelligent Microsystems

- MEMS/NEMS
- Micro Sensors
- Micro Actuators
- Sensor Fusion
- Microfluidics
- Structural Health Monitoring
- Microsystems for Robotics

5 Power & RF Electronics

- Power Electronics
- Power ICs
- RF/mmWave/THz
- Communications Electronics
- Energy Harvesting
- Power Management

6 Photonics & Quantum Technologies

- Integrated Photonic Circuits
- Optical Interconnects
- Quantum Technology Components
- Cryogenic, Control, and Readout Electronics
- Packaging and Integration for Qubit-Systems

7 Security, Reliability & Sustainability

- Hardware Security
- Trusted Electronics
- Security-by-Design
- Reliability
- Test
- Metrology
- Functional Safety
- Green ICT
- Resource Efficiency
- Circular Economy

Applications

- Mobility & Automotive
- Robotics & Industrial Automation
- Health & MedTech
- Energy & Grid
- Communication & Digital Infrastructure
- Infrastructure Monitoring
- Aerospace, Space & Defence

Congress Chairmen in 2027

- Prof. Fabian Lofink, Fraunhofer-Institut für Siliziumtechnologie ISIT, Itzehoe
- Prof. Hoc Khiem Trieu, Technische Universität Hamburg

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Submission of Contributions

- **Single-stage submission process**
- Authors must first select a topic and then the corresponding application category before uploading their manuscript.
- Authors are requested to submit a publication-ready contribution that complies with all formatting and content requirements.
- All submissions must be written in English.
- Submitted contributions must be between two and three pages in length, including all figures, tables, and references.

Manuscripts can be submitted online at www.microelectronics-systems-congress.de, where a template for preparing the submission will be provided.

All accepted contributions will be published in the conference proceedings by VDE Verlag. By submitting your manuscript, you confirm that you have read and accepted the copyright guidelines available at: www.vde-verlag.de/fachwissen/schreibanleitungen

The corresponding author of an accepted manuscript is eligible to attend the Microelectronics and Systems Congress 2027 at a reduced registration fee of 620 EUR (Early Bird) and 820 EUR (Regular). Regular participation fees apply to co-authors. We expressly encourage contributions from industry. Purely marketing-oriented presentations are not desired.

IEEE Xplore: If you would like your manuscript to be additionally indexed and made available through IEEE Xplore, please indicate this when submitting your manuscript

Important Dates

- Submission of manuscripts: March 14, 2027
- Author´s notification: May 13, 2027

Organizer

The Microelectronics and Systems Congress 2027 is a joint event of the German Federal Ministry of Research, Technology and Space (BMFTR) and the VDE. It is organized by the VDE/VDI Society for Microelectronics, Microsystems and Precision Engineering (GMM) together with VDI/VDE Innovation + Technik GmbH.

Location



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