



**smartsystems
integration**

Prague Congress Centre

8 – 10 April 2025

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Conference Program – Tuesday, 8th April 2025

12:00 – 13:00	Registration Open	
13:00 – 16:15	Opening Session <i>Chaired by Klaus Beetz</i>	SOUTH HALL 2A & 2B
13:00	Opening Welcome together with apc m Harald Kuhn – Fraunhofer ENAS Martin Schellenberger – Fraunhofer IISB Jochen Kinauer – camLine GmbH	
13:15	Greetings Politicians from Czech Republic Jan Michal CZECHINVEST Michal Vavra Ministry of Education, Youth and Sports, Czech Republic	
13:45	SSI – Keynote Heterogenous Integration - Evolution of a Speciality Foundry Volker Herbig X-FAB MEMS Foundry GmbH	
14:15	apc m – Keynote Digitalization and AI as Enabler for Stable, Sustainable and Green Manufacturing in Europe Yvonne Bergmann Robert Bosch / Germar Schneider Infineon Technologies	
14:45 – 15:15	Coffee Break	
15:15	SSI – Keynote Europe quo vadis – What do we need to know for future innovations? Christina Hirschl Silicon Austria Labs (SAL)	
15:45	apc m – Keynote Leveraging Manufacturing Data to Predict Latent Reliability Issues in Semiconductors Petr Lenhard Inference Technologies	
16:15 – 16:45	Sponsor and Exhibitor Pitches <i>Chaired by Klaus Beetz</i>	SOUTH HALL 2A & 2B
16:45 – 17:15	Coffee Break	
17:15 – 18:15	Poster Pitches <i>Chaired by Christian Irmischer & Martin Schellenberger, Fraunhofer IISB</i>	SOUTH HALL 2A & 2B
18:15 – 19:30	Poster Reception	FOYER

Conference Program – Wednesday, 9th April 2025

08:00	Registration opens	
09:00 – 10:30	Opening Session Day 2 SOUTH HALL 2B <i>Chaired by Klaus Beetz</i>	
09:00	Keynote: Introduction of Czech National Semiconductor Cluster and academic research in Czech Technical University in Prague (CTU) Milan Semmler & Radek Holy Czech National Semiconductor Cluster	
09:30	Keynote: System Engineering of Smart Sensors Dr. Stefan Leidich Robert Bosch GmbH	
10:00	Keynote: Transition to Smart Manufacturing Jörg Recklies Infineon Technologies	
10:30 – 11:00	Coffee Break	
11:00 – 12:30	Session 1: Smart System Integration (Track 2) <i>Chair: Paddy French</i> SOUTH HALL 2B	Session 2: Applications of Smart Systems (Track 3) <i>Chair: Sebastien Boisseau</i> TERRACE 2B
11:00	Session Opener Performance and Energy Consumption of Smart Sensors for Vibration-Based Anomaly Detection Martin Lehmann Fraunhofer IIS/EAS	Session Opener Smart City Pilots: Advancing Sustainable Mobility and Urban Innovation Santiago Ferrer Jover CT Engineering Group
11:30	Smart System Integration for Photonics Based Medical Devices Perspective of Chips JU Pilot Line Project PhotonMed, Teemu Alajoki VTT	SenMooVe: A Platform for Sensor-based Air Quality Monitoring in Public Transport Vehicles Holger Döring hd Management Consulting GmbH
11:50	FE approach to determine the effect of delamination in power electronic modules for automotive applications Jain Chacko Fraunhofer ENAS / TU Chemnitz	Smart Analytical Microtechnology for precision water monitoring Cecilia Jimenez-Jorquera Institut de Microelectrònica de Barcelona
12:10	Best Paper 2024: Silicon FET Reservoir for dynamic edge vision Diing Shenp Ang Nanyang Technological University	Enhancing Battery Management Systems with Advanced Printed Sensor Technologies Rúben Pedroso CeNTI
12:30 – 14:00	Lunch Break	
14:00 – 15:50	Session 3: Artificial Intelligence (Track 2) <i>Chair: Dirk Mayer</i> SOUTH HALL 2B	Session 4: Sensing (Track 1) <i>Chair: Luis Fonseca</i> TERRACE 2B
14:00	Session Opener From Tools to Intelligence – GenAI and the Future of UX and Product Development Niels Clausen-Stuck ZEISS Digital Partners	Session Opener The Impact of Ecosystems on the Growth of the Integrated Photonics Industry Abdul Rahim PhotonDelta
14:30	Towards Fast Gaussian Process Regression Models: An FPGA-based Implementation of the RBF Kernel Matrix Computation Anna Zuchna TU Chemnitz	Integration of Hydrogels on MEMS for Humidity Sensing Applications Maximillian Lippold Infineon Technologies Dresden / TUBA Freiberg
14:50	AI-driven workflow for chemical compounds classification from IR spectra of solutions Luca Savio Lutech Softjam / Fraunhofer ENAS	Testing and Optimization of Flexible Pressure Sensors for the Integration into Battery Cells Michael Jank Fraunhofer IISB
15:10	Supporting Development of AI-Based Applications in Electronic Systems Domain Using a Modular Platform Approach Dennis Hemker Fraunhofer FIT	Ratiometric analysis of sensor recovery time for organ health monitoring Avik Sett TU Delft / Kolkata
15:30	Preprocessing Techniques to Enhance Data Quality for AI Models in EMC Analysis Jad Maalouly Fraunhofer FIT / Hochschule Hamm-Lippstadt	Universal PMUTs – Piezoelectric Micromachined Ultrasonic Transducers with an Automatic Wire Bond Process for Adaptive Acoustic Channels Shubham Mulay Fraunhofer ENAS / TU Chemnitz
15:50 – 16:30	Coffee Break	
16:30 – 18:00	Posters, Exhibition, Networking	
18:00 – 22:00	Conference Dinner	

Conference program – Thursday, 10th April 2025

08:30	Registration opens	
09:00 – 10:30	Opening Session Day 3 <i>Chaired by Klaus Beetz</i> SOUTH HALL 2B	
09:00	Keynote The European Chips Act - Progress and Path Forward Gustav Kalbe European Commission	
09:30	Keynote APECS Peak Performance in Heterogeneous Integration Stephan Guttowski Research Fab Microelectronics Germany (FMD)	
10:00	Keynote Quantum technologies — the present and the future? Igor Jex Prague Technical University	
10:30 – 11:00	Coffee Break	
11:00 – 12:30	Session 5: Technologies for Quantum Systems (Track 4) SOUTH HALL 2B Chair: Stefan Schulz	
11:00	Session Opener Implementation of quantum technology in industrial products Jan Meijer Universität Leipzig	
11:30	Nanolithographic waveguides, couplers and ring resonators made of Si ₃ N ₄ and AlN for photonics and quantum technologies Julia Wecker Fraunhofer ENAS	
11:50	Superconducting Flexible Shielded Interconnects for Scalable Quantum Computing Martijn Goedbloed Fraunhofer EMFT / Fraunhofer IIS	
12:10	DNA origami based approach for an electrically driven single photon source for contaminant detection in water Julia Hann TU Chemnitz / CIC biomaGUNE	
12:30 – 14:00	Lunch Break	
14:00 – 15:30	Session 6: Technology (Track 1) SOUTH HALL 2B Chair: Matthias Kühnel	Session 7: Sustainability (Track 3) TERRACE 2B Chair: Han Shao
14:00	Session Opener Wafer Level Technologies for System Integration Tino Jäger X-FAB MEMS Foundry GmbH	Session Opener Vision and Roadmap for Circularity of Printed Electronics in the Automotive Sector Carolin Zachäus VDI/VDE Innovation / VITO
14:30	A novel high-speed camera system for capturing microfluidic droplets Veiko Rütter Tallin University of Technology / Estonian Military Academy	Analysis of the Carbon Footprint of Self-Powered, Wireless Sensors Johannes Wieczorek Fraunhofer IIS / Fraunhofer IZM
14:50	Influence of plasma activation on direct wafer bonding of the heterogeneous material combination LiTaO ₃ /Si Dominic Richter Fraunhofer ENAS / TU Chemnitz	Real-time soil sensing system for farm monitoring all along FAMOSOS project Elise Saoutieff CEA-Leti
15:10	Parylene C based memristors for the realization of ultra-thin and flexible smart systems Franz Selbmann Fraunhofer ENAS / TUBA Freiberg / TU Chemnitz	Innovations in façade system: Smart Solutions for Optimizing Energy Efficiency in Buildings Joana Gomes CeNTI
15:30 – 16:00	Coffee Break	
16:00 – 16:30	Best Poster and Best Paper 2025! Chaired by Harald Kuhn and Wolfgang Dettmann SOUTH HALL 2B	
16:30	End of Conference	

Poster pitches

Poster	Nr	Presenter	Institution / Company	Title
T101	123318	Stefan Karanovic	AVL List GmbH	Advanced Current Measurement Sensor Enabled by Multi-Material Additive Manufacturing
T102	123454	Dominic Richter	Fraunhofer ENAS / TU Chemnitz	Influence of plasma activation on direct wafer bonding of the heterogeneous material combination LiTaO ₃ /Si
T103	123471	Roy Knechtel	Schmalkalden University of Applied Sciences	Assessment for Identification of an Optimal Wafer Bonding Process for Industrial Production of Highly Integrated MEMS Applications in a Wafer Foundry
T104	123641	Zaid Ali	Budapest University of Technology and Economics	Enhancing Stability and Performance in Renewable Energy Systems Through Optimization-Based Tuning of Grid-Forming Controllers
T105	123884	Mathis Janßen	TU Chemnitz	Investigations of storage stability for DNA Origami in water and defect analysis
T106	123922	Carles Cané	Institute of Microelectronics of Barcelona	Introducing gas/vapor microsensors into remote monitoring of water deficit in grapevines
T201	122900	George Kornaros	Hellenic Mediterranean University	IoT Devices Resource Management through Extending Kubernetes Device Plugin
T202	123087	Cedric Mwangi	Kenyatta University	Wearable Technology with Machine Learning Algorithms for Monitoring and Early Detection of Seizures
T203	123159	Christian Schott	TU Chemnitz	Bridging Verification and Testing with SysMLv2: A Practical Approach for IC Development
T204	123299	Sanaz Ghazavi	TU Chemnitz	Customized SysMLv2 Profile for Model-Driven Circuit Test Development
T205	123444	Katrin Unger	Silicon Austria Labs GmbH	Industrial Internet of Things Sensor System: Encapsulation for Robust Performance in Harsh Environments
T206	123467	Harshita Sharma	Fraunhofer ENAS	Development of a Python-Based Mastercurvecreator Tool for Viscoelastic Materials
T207	123744	Alessio Viticchiè	AlphaWaves	AI-Driven Automation for Industrial Digitalization: A Scalable Framework for Network Discovery and Digital Twin Deployment
T208	123874	Mujdat Soy Turk	Marmara University	High-Fidelity Synthetic Data-Driven Machine Learning Framework for Predictive Maintenance of Three-Phase Industrial Motors
T209	123878	Mujdat Soy Turk	Marmara University	Generative Pattern Learning for Missing Sensor Data Imputation in Industrial IoT
T210	123899	Ferdinand Heinrich	Fraunhofer EMFT	Enabling Federated Learning: Generating Synthetic Clients through Time Series Data Augmentation
T211	123900	Joris Liebermann	Fraunhofer IIS/EAS	Self-Detection of Mounting Looseness with a MEMS Accelerometer
T301	123159	Brendan O'Flynn	University College Cork	AURORA: Precision Tracking Systems for Cultural Heritage Monitoring
T302	123313	Elise Saoutieff	CEA-Leti	Bio-sensing system for water real-time monitoring in BioSensei project
T303	123315	Chang-Hua Lin	National Taiwan University of Science and Technology	Comparison and verification of control strategies of energy storage systems in DC Microgrids
T304	123914	Kianoush Rassels	Delft University of Technology	Bio-Remote Sensing in Real-Time Thermographic Face Detection and Respiratory Rate Measurement
T401	123751	Torsten Thieme	DEAXO GmbH	Advanced micro integration technologies for fabrication of micro-ion-traps for a trapped-ion quantum computer