

smartsystemsintegration

8th-10th April 2025 in Prague, Czech Republic



CO-LOCATED WITH
apc | m
europe

PRAGUE, CZECH REPUBLIC
8 - 10 APRIL 2025

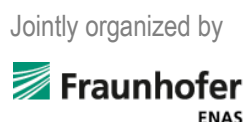
smartsystemsintegration

Prague Congress Centre

April 8 - 10, 2025

More information at
smartsystemsintegration.com &
apcm-europe.eu

We thank our sponsors!



smartsystemsintegration

8th-10th April 2025 in Prague, Czech Republic

Conference Program – Tuesday, 8th April 2025

12:00 – 13:00	Registration open
13:00 – 16:00	Opening Session <i>Chaired by Klaus Beetz</i>
13:00	Opening Welcome together with apc m Harald Kuhn – Fraunhofer ENAS + Martin Schellenberger – Fraunhofer IISB
13:15	Greetings Politicians from Saxony and Czech Republic Michal Vavra – Ministry of Education, Youth and Sports, Czech Republic Lukáš Vlček Minister of Industry and Trade of the Czech Republic (tbc.)
13:45	SSI – Key Note Heterogenous Integration - Evolution of a Speciality Foundry Volker Herbig – X-FAB MEMS Foundry GmbH
14:15	apc m – Key Note Digitilization and AI as Enabler for a More Stable and Energy- Efficient Manufacturing in Europe Yvonne Bergmann Robert Bosch + Gernar Schneider Infineon Tech.
14:45	SSI – Key Note Europe quo vadis – What do we need to know for future innovations? Christina Hirschl – Silicon Austria Labs (SAL)
15:15	apc m – Key Note Leveraging Manufacturing Data to Predict Latent Reliability Issues in Semiconductors Petr Lenhard Inference Technologies
15:45	Q&A
16:00 – 16:30	Coffee break
16:30 – 18:00	Poster Pitches together with apc m
18:00	Poster Reception

Conference Program – Wednesday, 9th April 2025

09:00 – 10:00	Opening session Day 2 <i>Chaired by Klaus Beetz</i>	
09:00	Key Note System Engineering of Smart Sensors Stefan Leidich – Robert Bosch GmbH	
09:30	Key Note Transistion to Smart Manufacturing Jörg Recklies – Infineon Technologies	
10:00 – 10:30	Coffee break	
10:30 – 12:00	Session 1: Smart System Integration <i>(Track 2)</i> <i>Chair: Paddy French</i>	Session 2: Applications of Smart Systems <i>(Track 3)</i> <i>Chair: Sywert Brongersma – ask Antonio Lionetto</i>
10:30	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
11:00	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
11:20	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 (IMB-CNM) CSIC
11:40	Best Paper 2024: Silicon FET Reservoir for dynamic edge vision Diing Shenp Ang – Nanyang Technological University	The Introduction of Printed Sensors in Battery Systems to Enhance State of Health Evaluation Rúben Pedroso – CeNTI
12:00 – 13:30	Lunch break	
13:30 – 14:30	Sponsor and Exhibitor Pitches <i>Chaired by Klaus Beetz</i>	
14:30 – 16:30	Session 3: Artificial Intelligence <i>(Track 2)</i> <i>Chair: Christoph Koegler, Harald Mathis and Dirk Mayer</i>	Session 4: Sensing <i>(Track 1)</i> <i>Chair: Luis Fonseca and Sebastien Boisseau</i>
14:30	Session Opener <i>Titel</i>	Session Opener The Impact of Ecosystems on the Growth of the Integrated Photonics Industry Abdul Rahim – PhotonDelta
15:00	Towards Fast Gaussian Process Regression Models: An FPGA-based Implementation of the RBF Kernel Matrix Computation Anna Zuchna –TU Chemnitz / Fraunhofer ENAS	Integration of Hydrogels on MEMS for Humidity Sensing Applications Alexander Kaufmann – Infineon Technologies Dresden / TUBA Freiberg
15:20	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: A Drop Casting Approach with Piezoresistive Elastomers Michael Jank – Fraunhofer IISB
15:40	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
16:00	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
16:30 – 17:00	Coffee break	
17:00 – 18:00	Posters, Exhibition, Networking	
18:00	Conference Dinner	

Jointly organized by

Conference program – Thursday, 10th April 2025

09:00 – 10:00	Opening session Day 3 Chaired by Klaus Beetz	
09:00	Key Note tbd	
09:30	Key Note tbd	
10:00 – 10:30	Coffee break	
10:30 – 12:00	Session 5: Technologies for Quantum Systems (Track 4) Chair: Stefan Schulz	
10:30	Session Opener Implementation of quantum technology in industrial products Jan Meijer – Universität Leipzig	
11:00	Nanolithographic waveguides, couplers and ring resonators made of Si ₃ N ₄ and AlN for photonics and quantum technologies Julia Wecker – Fraunhofer ENAS / TU Chemnitz	
11:20	Superconducting Flexible Shielded Interconnects for Scalable Quantum Computing Martijn Goedbloed – Fraunhofer EMFT / Fraunhofer IIS	
11:40	DNA origami based approach for an electrically driven single photon source for contaminant detection in water Julia Hann – TU Chemnitz / Fraunhofer ENAS / CIC biomaGUNE	
12:00 – 13:30	Lunch break	
13:30 – 15:00	Session 6: Technology (Track 1) Chair: Mathias Kühnel	Session 7: Sustainability (Track 3) Chair: Han Shao
13:30	Session Opener Wafel 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
14:00	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
14:20	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
14:40	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
15:00 – 15:30	Coffee break	
15:30-16:30	Best poster and best Paper 2025! Chaired by Harald Kuhn	
16:30	End of conference	

Jointly organized by

Poster pitches

Track	Nr	Presenter	Institution / Company	Title
1	123318	Stefan Karanovic	AVL List GmbH	Advanced Current Measurement Sensor Enabled by Multi-Material Additive Manufacturing
1	123454	Dominic Richter	Fraunhofer ENAS / TU Chemnitz	Influence of plasma activation on direct wafer bonding of the heterogeneous material combination LiTaO ₃ /Si
1	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
1	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
1	123884	Mathis Janßen	TU Chemnitz	DNA origami stability in liquid and defect analysis
1	123922	Stella Vallejos Vargas	Institute of Microelectronics of Barcelona	Electronic Gas/Vapor Sensors for Plant Monitoring
2	122900	George Kornaros	Hellenic Mediterranean University	IoT Devices Resource Management through Extending Kubernetes Device Plugin
2	123087	Cedric Mwangi	Kenyatta University	Wearable Devices Incorporating Multi-Modal Sensor Fusion and Machine Learning Algorithms for Monitoring and Early Detection of Seizures
2	123159	Christian Schott	TU Chemnitz	Bridging Verification and Testing with SysMLv2: A Practical Approach for IC Development
2	123299	Sanaz Ghazavi	TU Chemnitz	Customized SysMLv2 Profile for Model-Driven Circuit Test Development
2	123444	Katrin Unger	Silicon Austria Labs GmbH	Industrial Internet of Things Sensor System: Encapsulation for Robust Performance in Harsh Environments
2	123467	Harshita Sharma	Fraunhofer ENAS	Development of a Python-Based Mastercurvecreator Tool for Viscoelastic Materials
2	123744	Alessio Viticchiè	AlphaWaves	AI-Driven Automation for Industrial Digitalization: A Scalable Framework for Network Discovery and Digital Twin Deployment
2	123874	Anilcan Erciyes	Marmara University	High-Fidelity Synthetic Data-Driven Machine Learning Framework for Predictive Maintenance of Three-Phase Industrial Motors
2	123878	Binaman Amuri	Marmara University	Generative Pattern Learning for Missing Sensor Data Imputation in Industrial IoT
2	123899	Ferdinand Heinrich	Fraunhofer EMFT	Flexible Data Augmentation Methods for Federated Learning with Non-IID Data Distribution
2	123900	Joris Liebermann	Fraunhofer IIS/EAS	Self-Detection of Mounting Looseness with a MEMS Accelerometer
3	123159	Brendan O'Flynn	University College Cork	AURORA: Precision Tracking Systems for Cultural Heritage Monitoring
3	123313	Elise Saoutieff	CEA-Leti	Bio-sensing system for water real-time monitoring in BioSensei project
3	123315	Chang-Hua Lin	National Taiwan University of Science and Technology	Comparison and verification of control strategies of energy storage systems in DC Microgrids
3	123914	Paddy French	Delft University of Technology	Bio-Remote Sensing in Real-Time Thermographic Face Detection and Respiratory Rate Measurement
4	123751	Torsten Thieme	DEAXO GmbH	Advanced micro integration technologies for fabrication of micro-ion-traps for a trapped-ion quantum computer
4	123856	Travis Scott	Fine Tech	Indium bump Interconnect flip chip bonding