



## Wednesday, June 11

## Registration &amp; Welcome Address (FOE/244)

Keynote 1:  
**Innovations across AI and Semiconductors**  
**Themis Prodromakis**  
Chair: Ronald Tetzlaff Room: FOE/244

## Coffee break

**RS1: Analog/RF and Mixed Signal Circuits**  
Chairs: Georgios Panagopoulos / Maria Papadopoulou Room: FOE/244**RS2: Sensors and Systems**  
Chair: Richard Schroeder / Carsten Knoll Room: FOE/101

**Eleftherios Sarra**  
Monolithic Integrated GaN Circuit for Temperature Compensated Biasing

**Dmitry Baimel**  
Implementation of Novel Multi-Supply Bridge Fault Current Limiter for Transient Stability Enhancement of DFIG-Based Wind Turbines

**Savvas Karaliadis**  
Design Cycle Speed up of Product Level Voltage References

**Mohammed Hassan Arif**  
Direction of Arrival Estimation Using Compressive Sensing and Green's Function Interpretation for a Frequency-Diverse Metasurface

**Vassilis Alimisis**  
A Cuff-Less Blood Pressure Estimation System Based On Low-Power Analog Integrated Neural Network

**Dimitrios Brodimas**  
Federated Learning for Workload Forecasting for Network Service Management

**Vassileios Moustakas**  
A Low-Power Analog Integrated Decision Tree for Diabetic Retinopathy Detection

**Stylianos A. Myrtilinaios**  
Victim Detection Using a Robot-Mounted UWB-Radar Platform

**Mohamed Wafiq**  
Low-Rank Kernel Propagation: an on-line Incremental Learning Architecture for analog-based Hardware Accelerators

**Phuc Trung Loc Nguyen**  
Sparse-KSVD for Blind Decomposition on Task-Related NMR Data: A Comparative Analysis with ICA and MCA-KSVD

**Lukas Hüsken**  
Power Amplifier Design With 8 dBm Saturated Output Power in D-band In 22-nm FDSOI Technology

**Stylianos A. Myrtilinaios**  
A radar-based berthing-aid system (R-BAS)

**Georgios Panagopoulos**  
A 28 GHz Low-Phase Noise VCO in 22nm FD-SOI using Back-Gate Coupling

## Lunch

Keynote 2:  
**Big AI for Small Devices**  
**Hai (Helen) Li**  
Chair: Spiros Nikolaidis Room: FOE/244

## Coffee break

## Poster Session

Location: Foyer in front of FOE/244

**SpS1: Emerging Memory Devices for In-Memory AI: From Materials to System Integration**  
Chairs: Thomas Kämpfe / Alptekin Vardar Room: FOE/244**RS3: Device and Circuit Modeling**  
Chairs: Ioannis Messaris / Dimitris Prousalis Room: FOE/101

**Delanira Fejzi**  
A Vertical Memristive MoS<sub>2</sub>-exfoliated Device for Applications in Artificial Synapses

**Lili Xie**  
Empirical Programming Protocol and Monitor-Free Multi-Level Modulation for Memristors

**Chong Peng**  
Nucleation-limited-switching based compact models for Hf-based ferroelectric devices and their applications in memory arrays

**Juan Martinez**  
Verilog-A look-up table model of a TiG-RFET compatible with 22 nm FDSOI design rules Satisfying Gummel Symmetry

**Alptekin Vardar**  
People Counting and Positioning Using Low-Resolution Infrared Images for Resource-Constrained Edge Inference

**Sahitya Yarraopalla**  
Coexistence of resistive capacitive and virtual inductive effects in memristive devices

**Ximeng Jiang**  
Thermal-Compensated MRAM Sensing: Dynamic TMR Stabilization Across Wide Temperature Range

**Emmanouil Stavroulakis**  
RRAM-based Hardware Implementation Of P-Systems

**Nelli Laleni**  
Integrating P-bits in MTJs: A Bridge to Efficient Stochastic Computing

**Carsten Knoll**  
Towards Formal Representation of Memristor-Related Domain Knowledge – A Pragmatic Attempt

## Welcome Reception

Location: FOE-Courtyard

## Thursday, June 12

## Registration

Keynote 3:  
**ESMC – a light house project of the European chips act in Silicon Saxony**  
**Christian Koitzsch**  
Chair: Ronald Tetzlaff Room: FOE/244

## Coffee break

**SpS2: Trends in Modern Computer Arithmetic and Digital Number Formats**  
Chairs: Jochen Rust / Moritz Bärthel Room: FOE/244**SpS3: Advances in Memristive Neuromorphic Devices and Circuits for Artificial Intelligence and Edge Computing**  
Chairs: Alon Ascoli / Ahmet Sami Demirkol Room: FOE/101

**Martin Kumm & Florent de Dinechin**  
Application-specific Arithmetic (Invited Talk)

**Valeri Mladenov**  
Memristor Based Logic Gates and Circuits for Artificial Intelligence

**Akash Kumar**  
Approximate Arithmetic Circuits Enabling Energy-efficient Edge Computing

**Richard Schroeder**  
Model-based write algorithm for Memristive crossbar arrays

**Leslo Humhold**  
Streamlining SIMD ISA Extensions with Takum Arithmetic: A Case Study on Intel AVX10.2

**Valeri Mladenov**  
A Simple Analog Neuron with Memristor Based Synapses and SATUNs Transfer Function

**Moritz Bärthel**  
A Formal Evaluation of the Design Space for SORN Arithmetic Datatypes

**Pushkar Srivastava**  
2-MOSFET Dynamic Threshold-Based Reversible & Bipolar Unbiased Inverse-Memristor Emulator

**Nils Hülsmeyer**  
Multiplier-Free Neural Networks: An Exploration of SORN-based Neural Networks on Hardware

**Kapil Bhardwaj**  
Preventing False Activations in Autonomous Vehicles: A Memristive Associative Learning Approach with Selective Sensor Pairing

**Jochen Rust**  
SORN-based Cross-Correlation for SCG Signal Peak Detection in Resource-Constrained Systems

**Alon Ascoli**  
NDR Effects in a Locally-Active Memristor Induce Small-Signal Amplification in a Simple Cell

## Lunch

Keynote 4:  
**Diffusive and drift memristors for neuromorphic and analog computing**  
**J. Joshua Yang**  
Chair: Alon Ascoli Room: FOE/244

## Coffee break

## Group picture

Location: Inner courtyard of Fritz-Förster-Bau

**Industry Session: Impulse Talk**  
**Jürgen Daleiden**  
Room: FOE/244

## Round Table Discussion

Chair: Ronald Tetzlaff Room: FOE/244

## Gala Dinner

Location: Anna at Residence Castle Dresden

## Friday, June 13

## Registration

Keynote 5:  
**AI chips. How about safety and security?**  
**Jaap Raik**  
Chair: Spiros Nikolaidis Room: FOE/244

## Coffee break

**RS4: Artificial Intelligence, Machine Learning and their Applications**  
Chairs: Vasileios Ninas Room: FOE/244**RS5: Nonlinear Circuits and Systems**  
Chairs: Ahmet Sami Demirkol / Dimitris Prousalis Room: FOE/101

**Ioannis Kafetsis**  
Efficient Selection of Rare Pathology Samples from Unlabeled Medical Data Via Deep Active Learning

**Wojciech Kornecki**  
Quantitative description of the stochastic resonance in Chua circuit using the DFT of switch-phase difference distribution

**Eleni Tseligi**  
Early-Stage Prediction of Electromigration Stress Using Extreme Gradient Boosting Algorithm

**Lamberto Carnazza**  
A New Analog Circuit Implementation Of the Itzhakkevich Neuron

**Athanasios Delis**  
Low Cost Platelets Rich Plasma Facilities Creation with AI-Driven Cardiovascular Disease Assessment Using Raman Spectroscopy

**Eduardo Elpidio Rodrigues**  
Complex Dynamics and Implementation of Neuron Models Coupled Via Second Order Memristor

**Vijay Barathrey**  
PID-Controlled Active Half Car Suspension System with AI Based Shock Absorber

**Lazaros Moysis**  
Efficient Chaotic Image Encryption with Circular Shifting And Soboleva-Modulo Map

**Filip Iwanis**  
Towards a Soft Robotic Glove for Physical Rehabilitation Featuring Adjustable Agonist/Antagonist Muscle Support

**Liming Sun**  
Spectrum: A holistic evaluation framework for nonlinear system modeling methods

**Athanasios Delis**  
Electrical Components Detection in Images with YOLO Model Architectures using Slicing-Aided Hyper Inference

**Lazaros Moysis**  
A Generalized Attention Deficit Disorder Chaotic Model With Soboleva Hyperbolic Tangent Functions

**Eleni Bougioukou**  
Efficient Deployment of CNN Models On multiple In-Memory Computing Units

**Alexandra Choumpary**  
A Generalized Chaotic Neural Network Model for Epilepsy Using Soboleva Hyperbolic Tangent Functions

## Lunch

Keynote 6:  
**In-Memory Sensing by Switching Devices**  
**Sandro Carrara**  
Chair: Jens Trommer Room: FOE/244

## Coffee break

**RS6: Digital Circuits and Systems**  
Chairs: Alberto Garcia-Ortiz / Valeri Mladenov Room: FOE/244**SpS4: Advanced Technologies, Systems, and Applications for Expanding Wireless Communications Horizons**  
Chairs: Achilles Boursianis / George Tsoulous Room: FOE/101

**Evangelia Konstantopoulou**  
Optimizing Lightweight Cryptographic Schemes for Enhanced Security in RFID and Wireless Sensor Networks

**Franz Alwin Dürwald**  
Low-Loss GSG Bondwire Chip-to-Chip Interconnects from DC to 330 GHz

**Christodoulos Petekis**  
Periodic Online Testing for Sparse Systolic Tensor Arrays

**Vasileios Tsoulos**  
Machine Learning-Based In-Car KPI Predictions for Cellular Networks

**Zeyu Huang**  
Research on the Simulation Acceleration Method of System-Level Single-Event Effects Based on Register Fault Injection

**Achilles Boursianis**  
ML methods for SNR Prediction in Vehicular Communications

**Shereef Hetal**  
VLSI: Virtually Upscaled Systolic Array Architecture to Exploit Unstructured Sparsity in AI Acceleration

**Georgios Korompilis**  
Two-layered Ultra-Wideband and High Gain Metamaterial Antenna for 5G Ka-Band Applications Using the Mountain Gazeleo Optimizer

**Weeden Mohamed**  
Quantized Semantic Segmentation for Efficient Spectrum Sensing on FPGAs

**Giuseppe Grassi**  
Non-Volatile Memristor as a Backscattering Circuit Element: High-Frequency Analysis and Preliminary Theoretical Considerations

**Ioannis Stefanidis**  
Trade-offs in the Sleep Mode Management of the RP2040 Microcontroller

**Best Paper Award Ceremony / Outlook on MOCAST 2026 / Farewell**  
Chair: Spiros Nikolaidis Room: FOE/244