



Wednesday, June 11

Registration & Welcome Address (FOE/244)

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

Coffee break

RS1: Analog/RF and Mixed Signal Circuits

Chairs: Georgios Panagopoulos / Maria Papadopoulou

RS2: Sensors and Systems

Chair: Richard Schroeder / Carsten Knoll Room: FOE/101

Eleftherios Sarris
Monolithic Integrated Gain Circuit for Temperature Compensated Biasing

Svetlana Bronstein
Implementation of Novel Multi-Step Bridge Fault Current Limiter for Transient Stability Enhancement of DRG-Based Wind Turbines

Savvas Karipidis
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

Vassilia 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

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

Sylvianos A. Mytilinaios
Victim Detection Using a Robot Mounted UWB-Radar Platform

Mohamed Warfa
Low-Rank Equilibrium Propagation: an on-line Incremental Learning Architecture for analog-based Hardware Accelerators

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

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

Sylvianos A. Mytilinaios
A radar-based berthing-aid system (R-BAS)

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

Dimitrios Soumis / Nikolaos Tsilikas
Automation of the "Sit-to-Stand" Test

Lunch

Keynote 2:
Big AI for Small Devices
Hai (Helen) Li
Chair: Spyridon 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 / Alpekin Vardar Room: FOE/244

RS3: Device and Circuit Modeling

Chairs: Ioannis Mesaritis / Dimitris Prousalis Room: FOE/101

Delanira Fejaiz
A Vertical Memristive MoS₂-exfoliated Device for Applications in Artificial Synapses

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

Cheng 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

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

Sahitya Yarraolla
Consistency of resistive capacitive and virtual Inductive effects in memristive devices

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

Emmanouil Stavroulakis
RRAM-based Hardware Implementation of F-F System

Nedil Lalani
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: Christa 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: Ahmet Sami Demirkol / Alon Ascoli 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 Hunhold
Streamlining SMD ISA Extensions with Takum Arithmetic: A Case Study on Intel AVX10.2

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

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

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

Nikil Wilmshier
Multiplier-Free Neural Networks: An Exploration of SORN-based Neural Networks on Hardware

Shiveta Kumar
Stochastic Computing Based Lowly Integrate and Fire Neuron Circuit for Spiking Neural Network

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 (incl. Group picture)

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

Coffee break

Industry Session: Impulse Talks

Room: FOE/244

Coffee break

Round Table Discussion

Chair: Jürgen Dalslein (GlobalFoundries) Room: FOE/244

Gala Dinner

Location Anna at Residence Castle Dresden

Friday, June 13

Registration

Keynote 5:
AI chips. How about safety and security?
Jaan Raik
Chair: Spyridon Nikolaidis Room: FOE/244

Coffee break

RS4: Artificial Intelligence, Machine learning and their Applications

Chairs: Vasileios Neinas Prousalis Room: FOE/244

RSS: Nonlinear Circuits and Systems

Chairs: Ahmet Sami Demirkol / Dimitris Prousalis Room: FOE/101

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

Wojciech Korneta
Quantitative description of the stochastic resonance in Chua circuit using 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 Itzhikewi-Neuron

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

Eduardo Elindio Rodriguez
Complex Dynamics and Implementation of Neuron Models Coupled Via Second Order Memristor

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

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

Elisa Ivamis
Towards a Soft Robotic Glove for Physical Rehabilitation Featuring Adjustable Agonist/Antagonist Muscle Support

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

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

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

Theodoros Antonakopoulos
Efficient Deployment of CNN Models On multiple In-Memory Computing Units

Alexandra Choumpa
A Generalized Chaotic Neural Network Model for Epilepsy Using Soboleva Hyperbolic-Tangent Functions

Keynote 6:

In-Memory Sensing by Switching Devices
Sandro Carrara
Chair: tba 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 Tsoulos 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 Pelekis
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 Helal
VUSA: Virtually Upscaled Systolic Array Architecture to Exploit Unstructured Sparsity in AI Acceleration

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

Wegdan Mohamed
Quantized Semantic Segmentation for Efficient Spectrum Sensing on FPGAs

Gusepse Grani
Non-Volatile Memristor as a Backscattering Circuit Element: High-Frequency Analysis and Preliminary Theoretical Considerations

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

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