

Program in detail

Wednesday, October 28

14:15 – 14:30 **Opening ceremony SIITME 2026**

EEST | GMT +3h

Ovidiu Aurel POP, *Dean of Faculty of Electronics, Telecommunications and Information Technology, Technical University of Cluj-Napoca, Romania*

Daniel Emil Constantin DUNEA, *Vice-Rector for University Research and Creation, Valahia University of Târgoviște, Romania*

14:30 – 16:15 **Plenary Oral Session 1**

EEST | GMT +3h

Session Chair: Nicoleta ANGELESCU, Valahia University of Târgoviște, Romania

Session Co-Chair: Ovidiu POP, Technical University of Cluj-Napoca, Romania

K1 Recent Advances in Plasmonic Interconnect Technologies

Attila BONYAR

Professor, BME Hungary

O1.1 ID130 From Predictive AI to Agentic Closed-Loop Optimization: A Structured Review of AI-EDA

V. Șerban, I. Elisei, M. Tolontan, C. Orhei

Faculty of Electronics, Telecommunications and Information Technologies, Politehnica University Timișoara, Timișoara, Romania

O1.2 ID136 Signal Processing Optimization for LSPR Nanosensors Using a Custom Imaging-Based Optical System

D. Kaouari, T. Lednický¹, L. T. Csőke², and A. Bonyár

Department of Electronics Technology, Faculty of Electrical Engineering and Informatics, Budapest University of Technology and Economics, Budapest, Hungary

¹) Leibniz Institute of Photonic Technology, Jena, Germany

²) Optimal Optik Ltd., Budapest, Hungary

O1.3 ID108 A Methodology for PCBA Fault Diagnosis Using Infrared Thermography and Machine Learning

S. Dimitrov¹, D.-S. Vizitiu², R.-N. Susanu², R.-G. Ailiesei², S. Kadirova¹, B. Evstatiev¹

¹) Department of Automatics & Electronics, Angel Kanchev University of Ruse, Ruse, Bulgaria

²) Department of Telecommunications and Information Technologies, Gheorghe Asachi Technical University of Iasi, Iasi, Romania

16:30 – 17:30 **Industrial Session 1**

EEST | GMT +3h

Session Chair: Daniel-Ciprian VASILE, POLITEHNICA Bucharest, Romania

Session Co-Chair: Liviu OLTEANU, Valahia University of Târgoviște, Romania

AUMOVIO Technologies Romania

Thursday, October 29

09:00 - 11:00 **Plenary Oral Session 2**

EEST | GMT +3h

Session Chair: Arcadie CRACAN, Gheorghe Asachi Technical University of Iasi, Romania

Session Co-Chair: Boris EVSTATIEV, Angel Kanchev University of Ruse, Bulgaria

K2 Thermal Evaluation of Heat Generating Components in Automotive High-Performance Computing (HPC) Units

Cristina Mihaela DRĂGAN

Thermal Analyst Expert, AUMOVIO Timişoara

O2.1 ID50 Non-Uniformity Correction in CMOS Image Sensors: A Review of Algorithms, Models, and Embedded Implementation

P. Dikulakov

Department of Automation and Electronics, Angel Kanchev University of Ruse, Ruse, Bulgaria

O2.2 ID174 From Sensor Data to Vehicle Action: Causality-Aware Validation for Automotive IoT

A.A. Maftai, A. Lavric, A.I. Petrariu, M. Cenusă and V. Popa

Computers, Electronics and Automation Department, Stefan Cel Mare University of Suceava, Suceava, Romania

O2.3 ID140 Error-Budget-Driven Behavioral Modeling and Design Specification of a CMOS Planar-Hall Magnetic Angle Sensor

G.I. Bonteanu, M.-L. Apostol, A. Cracan, and N. Patache

Fundamentals of Electronics Department, Faculty of Electronics, Telecommunications and Information Technology, Gheorghe Asachi Technical University of Iaşi, Iaşi, Romania

O2.4 ID85 Energy Management Algorithm in Smart Microgrids with Fuel Cells that Uses Battery Degradation Cost and Short-Term Load Prediction

T.M. Pătăraş, D. M. Petreuş, E. Szilagyi, and D. Fodorean¹⁾

Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

¹⁾ Electrical Machines and Drives, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

11:00 - 12:30 Poster Session 1 (Starts with a video pitching session in the plenary room, followed by discussion at the poster)

EEST | GMT +3h

Session Chair: Radu Gabriel BOZOMITU, Gheorghe Asachi Technical University of Iaşi, Romania

Session Co-Chair: Bálint MEDGYES, Budapest University of Technology and Economics, Hungary

P1.1 ID52 Delta-Based OTA Updates for Resource-Constrained AUTOSAR Classic ECUs

M.-R. Radu, and D. Petreuş

Applied Electronics Department, Faculty of Electronics, Telecommunications and Information Technology,
Technical University of Cluj-Napoca, Cluj-Napoca, Romania,

P1.2 ID53 Comparative Evaluation of Adaptive Security Function Placement in Automotive Architectures R. Radu, and D. Petreuş

Applied Electronics Department, Faculty of Electronics, Telecommunications, and Information Technology,
Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P1.3 ID64 Overview of Automotive Safety, Cybersecurity and Standards for ADAS/ADS

D.-C. Gavrilescu, R. Fizesan, S. Pop, O. A. Pop

Faculty of Electronics, Telecommunications and Information Technology, Technical University of Cluj-Napoca,
Cluj-Napoca, Romania

P1.4 ID71 Rapid Software Porting through Hardware-Software Co-Design and Heterogeneous Integration Technologies: A Comparative Analysis

G. Flutur¹⁾, A. I. Ilies²⁾, C. Corches¹⁾, and R. Jánó²⁾

¹⁾Automation Department, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

²⁾Applied Electronics Department, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P1.5 ID72 Transitioning to Edge AI for Automated Insect Pest Monitoring

C. Abramov, P. Svasta

Faculty of Electronics, Telecommunications & Information Technology National University of Science and
Technology POLITEHNICA Bucharest, Romania

P1.6 ID84 Wireless Hand Gesture Control System for a Mobile Platform

A. Catalan, R.-C. Constantinescu, and B. Alexandrescu

Faculty of Electronics, Telecommunications & Information Technology National University of Science and
Technology POLITEHNICA Bucharest, Romania

P1.7 ID90 Automatic Control System for Ventilation and Lighting Using Bluetooth Communication

L.-A. Pîrvu, R.-C. Constantinescu, and B. Alexandrescu

Faculty of Electronics, Telecommunications & Information Technology National University of Science and
Technology POLITEHNICA Bucharest, Romania

P1. 8 ID96 Monitoring the marine environment through advanced robotic detection using artificial intelligence mechanisms

T. Pintilie¹⁾, S. Segarceanu¹⁾, K. T. Hjelmervik²⁾ and G. Suciu¹⁾

¹⁾ BENE Cercetare S.R.L., Bucharest, Romania,

²⁾ Universitetet i Sørøst-Norge, Forskningsparken, Norway

P1.9 ID99 From GPUs to NPUs: A Survey on Accelerators

P. C. Mihalache, A. Bertescu ¹⁾, and C. B. Ciobanu^{1, 2)}

Electronics and Computers, Transilvania University of Braşov, Braşov, Romania

¹⁾ Electronics and Computers, Transilvania University of Braşov, Braşov, Romania

²⁾ Microtechnologies, National Institute of Research and Development, Bucharest, Romania

P1.10 ID103 Low-Cost Hardware-in-the-Loop Platform for Closed-Loop Stepper Motor Position Control Using LabVIEW

I. H. Baci, L. Viman, V. Bande, V. Veliciu and C. Onofrei
Applied Electronics Department
Technical University of Cluj Napoca, Cluj Napoca, Romania

P1.11 ID106 Intelligent MFA Control System in a Secure Environment using Edge AI and IoT

B.-M. Săraru, R.-C. Constantinescu, and B. Alexandrescu
Faculty of Electronics, Telecommunications & Information Technology National University of Science and Technology POLITEHNICA Bucharest, Romania

P1.12 ID168 Crosstalk Reduction Between Adjacent Signal Traces Using Commercial EMI Suppressor Sheets

D. A. Antonovici, P. M. Svasta
Faculty of Electronics, Telecommunications and Information Technology, National University of Science and Technology POLITEHNICA Bucharest, Bucharest, Romania

P1.13 ID169 Jitter and Crosstalk Trade-offs of Serpentine Routing Geometries in 10 Gb/s Single-ended Interconnects

D. A. Antonovici, P. M. Svasta
Faculty of Electronics, Telecommunications and Information Technology, National University of Science and Technology POLITEHNICA Bucharest, Bucharest, Romania

P1.14 ID117 Hardware-Software Analyses with Prometheus for Raspberry Pi 5 Systems Optimization

A. Pușcașu, and T. C. Bălan
Faculty of Electrical Engineering and Computer Science, Transilvania University of Brașov, Brașov, Romania

P1.15 ID119 Timing Interference and Static Partitioning in Mixed-Criticality Systems: A QNX, Jailhouse, XtratuM and PikeOS Evaluation

A. Sas, G. Chindris, R. Fizesan, O.A. Pop
Department of Electronics, Telecommunications and Information Technology, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P1.16 ID120 Intelligent Automatic Number Plate Recognition System

M.-C. Andrei, R.-C. Constantinescu, and B. Alexandrescu
Faculty of Electronics, Telecommunications & Information Technology National University of Science and Technology POLITEHNICA Bucharest, Romania

P1.17 ID124 Environmental Parameter Monitoring System in a Children's Playground

A.-M. Cristea, R.-C. Constantinescu, and B. Alexandrescu
Faculty of Electronics, Telecommunications & Information Technology National University of Science and Technology POLITEHNICA Bucharest, Romania

P1.18 ID137 Blind IoT Agent: A Local-First AI Assistant for Blind and Visually Impaired Users

D. Sabev, Ts. Kaneva, and I. Valova
Department of Computer Systems and Technologies, Angel Kanchev University of Ruse, Ruse, Bulgaria

P1.19 ID142 Applied Validation of Machine-Learning Intrusion Detection for Automotive ECUs

A.-M. Nica, and D. Petreuş
Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P1.20 ID143 Federated Model Update Lifecycle for Automotive Intrusion Detection

A.-M. Nica, and D. Petreuş

Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P1.21 ID145 Anti-tamper Conductive Mesh for SiP Devices

D. C. Vasile, P. M. Svasta, and R. C. Maxim

ETTI, National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

P1.22 ID151 Securing the In-vehicle CAN bus Communication using AES Cryptography

N. Căldărar, L.-A. Perişoară

Faculty of Electronics, Telecommunications and Information Technology, National University of Science and Technology Politehnica Bucharest, Romania

P1.23 ID166 Neural Network Implementation for Keyword Spotting on Low-Cost Embedded Hardware

D.-A. Uja ^{*,+}, P.-C. Medinceanu^{*,+}, M. Enachescu^{*,+}

^{*}AMPLIPH Laboratory, CAMPUS Research Center,

⁺National University of Science and Technology POLITEHNICA Bucharest, Romania

P1.24 ID167 Peltier-based Temperature Controlled Test System for Electronic Components

A. Drumea, and C. I. Marghescu

Department of Electronics Technology and Reliability,

National University for Science and Technology Politehnica Bucharest, Romania

P1.25 ID172 AI-Based RF Spectrum Anomaly Sensing

A. Gutu, A. Lavric, A.-I. Petrariu, V. Popa, C. Patachia-Sultanoiu^{1),3)} and R. M. Mihai^{2),3)}

Computers, Electronics and Automation Department, Ştefan cel Mare University of Suceava, Suceava, Romania

¹⁾ Faculty of Electronics, Telecommunications and Information Technology, Technical University of Iasi Gheorghe Asachi, Iasi, Romania

²⁾ Faculty of Electronics, Telecommunications and Information Technology, National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

³⁾ Orange Romania, Bucharest, Romania

P1.26 ID173 Drone Detection Using FMCW Radar and Range-Doppler Image Classification

G. Ungureanu, A. Lavric, A.-I. Petrariu, A.-A. Maftai, V. Popa, and R. M. Mihai^{1),2)}

Computers, Electronics and Automation Department, Ştefan cel Mare University of Suceava, Suceava, Romania

¹⁾ Faculty of Electronics, Telecommunications and Information Technology, National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

²⁾ Orange Romania, Bucharest, Romania

13:30 – 14:30

Industrial Session 2

EEST | GMT +3h

Session Chair: Cristina – Mihaela NICOLESCU, Valahia University of Târgovişte, Romania

Session Co-Chair: Mădălin MOISE, National University of Science and Technology Politehnica Bucharest, Romania

14:30 - 16:00 **Poster Session 2 (Starts with a video pitching session in the plenary room, followed by discussion at the poster)**
EEST | GMT +3h

Session Chair: Gabriel CHINDRIȘ, Technical University of Cluj-Napoca, Romania

Session Co-Chair: Cătălin CIOBANU, Transilvania University of Brașov, Romania

P2.1 ID74 Impact of Package Interconnect Length on the Signal Integrity of a PCIe Gen6 Differential Channel

M. Olteanu, C. Davidaș, A. Grama and A. Tăut

Applied Electronics Department, Technical University of Cluj-Napoca, Romania

P2.2 ID93 Signal Integrity Comparison of Organic and Silicon Interposers

V. Veliciu²⁾, A. C. Popescu¹⁾, C. Onofrei²⁾, I. M. Burcea¹⁾, L. Viman²⁾

¹⁾ IEEE Nanotechnology Council Student Branch Chapter of POLITEHNICA Bucharest, NANO42, SBC63061A, National University of Science and Technology POLITEHNICA Bucharest, Bucharest, Romania

²⁾ IEEE Electronics Packaging Society Student Branch Chapter of Technical Univ. of Cluj-Napoca, EP21, SBC10228, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P2.3 ID131 Preliminary Performance Assessment of Power Distribution Networks in 2.5D Systems Based on Simplified SPICE Models

A. Cimpean, M. Daraban, and O. Pop

Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P2.4 ID164A Reduced-Order Equivalent Circuit Model for a PEMFC Structure Based on Semiconductor Junction Characteristics

A. Terlea, A. Bojita and M. Purcar

Department of Electrotechnics and Measurements, Technical University of Cluj-Napoca, Cluj-Napoca, Cluj, Romania

P2.5 ID170 Geometric Parametric Optimization and Mixed-Mode Characterization of High-Speed Differential Vias

V. Cristescu, O. Axinte, M. Taut, M. Daraban, G. Chindris

Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P2.6 ID70 Design and Comparative Characterization of Positive and Negative Integrated Charge Pumps in BCD130Lite Gen2 Technology

A-L. Cretu, B. Marinca, A. Gontean

Microelectronics, Politehnica University Timisoara, Timisoara/Romania

P2.7 ID92 IoT Stethoscope: Design and Development of a Tool for Telemedicine

D. A. Circumariu, G. D. Șendrescu, S. D. Firincă

Department of Automatics and Electronics, University of Craiova, Craiova, Romania

P2.8 ID107 A Comparative Statistical Analysis of Motor Execution and Imagery EEG Signals Using Logarithmic Normalization

Ș. Gigoî, And I. Neaga, D. Arălungă, G. Neagu

University of National Sciences and Technology Politehnica Bucharest, Bucharest

P2.9 ID114 Investigation of impact sensors and e-textile connectors for combatant suits

E. Visileanu¹⁾, A. G. Ene¹⁾, C. Jipa¹⁾, F. Dondea¹⁾, R. Herzog²⁾ and I. R. Radulescu¹⁾

¹⁾ The National R&D Institute for Textiles and Leather, Bucharest, Romania

²⁾ Micro Science SRL, Bucharest, Romania

P2.10 ID51 A Low-Complexity RLS Adaptive Algorithm with Variable Forgetting Factor

R. A. Otopoleanu^{1,2)}, C. L. Stanciu^{1,2)}, C. Paleologu¹⁾, and J. Benesty³⁾

¹⁾ Department of Telecommunications, POLITEHNICA Bucharest, Bucharest, Romania

²⁾ Academy of Romanian Scientists, Ilfov 3, 050044, Bucharest, Romania

³⁾ INRS-EMT, University of Quebec, Montreal, Canada

P2.11 ID54 Deterministic Cross-Simulator Pre-Validation for LoRaWAN ADR Benchmarking

A.-C. Puiu and O. A. Pop

Department of Applied Electronics Technical University of Cluj-Napoca Cluj-Napoca, Romania

P2.12 ID68 A Distributed Edge-to-Cloud Architecture for Embedded IoT Systems

Ș.-C. Tănăsescu¹⁾, C. B. Ciobanu ^{1), 2)}

¹⁾ Transilvania University of Brașov, Romania

²⁾ National Institute of Research and Development in Microtechnologies, Bucharest, Romania

P2.13 ID94 Position Control of a CNC Machine Using a Hydrogen Fuel Cell-Based Power Architecture

I.-D. Roman

Automation Department, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P2.14 ID100 A New Software-Defined Radio System for M-QAM with Polyphase Filterbank-Based Symbol Timing Synchronization

R. G. Bozomitu, Ș. C. Stoica

Faculty of Electronics, Telecommunications and Information Technology, Gheorghe Asachi Technical University of Iași, Romania

P2.15 ID122 Towards Unified Soil Nitrogen Sensing via Alkaline Ammonia Volatilization and IoT Monitoring

G. Varzaru, R. Tulea, R. Ungurelu, V. Fatu¹⁾, and P. Svasta²⁾

Syswin Solutions, Bucharest, Romania

¹⁾ Research & Development Institute for Plant Protection, Bucharest/Romania

²⁾ National University for Science and Technology Politehnica, Bucharest, Romania

P2.16 ID129 Detection and Localization of Bluetooth Low Energy Devices

A. B. Andrieș, L. I. Petcu, A. M. Mazilu, D. Burdia, L. Scripcariu, and R. G. Bozomitu

Faculty of Electronics, Telecommunications and Information Technology, Gheorghe Asachi Technical University of Iași, Romania

P2.17 ID133 Analysis of Information Preservation in Image-Based Spectrogram Storage

A. Sârbu¹⁾, C. Neghină²⁾, M. Neghină²⁾

¹⁾ Nicolae Bălcescu Land Forces Academy, Sibiu, Romania

²⁾ Faculty of Engineering, Lucian Blaga University, Sibiu, Romania

P2.18 ID139 A CMOS Current Comparator with an Antiparallel Rectifier Pair as the Sole Decision Element for Current-Mode SAR ADCs

G. Bonteanu, A. Cracan, P. Bonteanu, and N. Cojan

Fundamentals of Electronics Department, Faculty of Electronics, Telecommunications and Information Technology, Gheorghe Asachi Technical University of Iași, Iași, Romania

P2.19 ID146 A Study on Ionization-Induced Negative Resistance of the Floating Current Sources in a Rail-to-Rail Class-AB CMOS Amplifier

N. Cojan, G. Bonteanu, A. Cracan and P. Bonteanu

Fundamentals of Electronics Department, Faculty of Electronics, Telecommunications and Information Technology, Gheorghe Asachi Technical University of Iași, Iași, Romania

P2.20 ID82 Design and Evaluation of a Level Shifter Circuit in 130 nm CMOS Technology

T. Grosu, A.-S. Gontean

Microelectronics, Politehnica University Timisoara, Timisoara/Romania

P2.21 ID87 A Digitally Programmable Hysteresis Rail-to-Rail CMOS Comparator

A. Moldovan, A. S. Gontean

Applied Electronics Department, Politehnica University, Timisoara, Romania

P2.22 ID115 Design and Simulation of a Rail-to-Rail Operational Amplifier with Folded Cascode in 130 nm CMOS

L.-M. Druțulescu, B. Marinca

Applied Electronics Department, Politehnica University, Timisoara, Romania

P2.23 ID147 BCD 130nm SRAM Design and Validation

A. R. Sicoe, A. Ș. Gontean

Applied Electronics Department, Politehnica University, Timisoara, Romania

P2.24 ID155 Influence of Photovoltaic Cell Geometry on MPPT Tracking Performance: A Co-Design Approach

D. Ionescu¹⁾, and Dan Butnicu²⁾

¹⁾ Department of Telecommunications and Information Technologies, Gh. Asachi Technical University of Iasi, Romania

²⁾ Department of Basics of Electronics, Gh. Asachi Technical University of Iasi, Romania

Friday, October 30

9:00 - 11:00

Plenary Oral Session 3

EEST | GMT +3h

Session Chair: Dorin PETREUȘ, Technical University of Cluj-Napoca, Romania

Session Co-Chair: Mihai NEGHINĂ, Lucian Blaga University of Sibiu, Romania

K3 Research and Engineering Education in the Age of AI: Opportunities, Boundaries, and Principles
Boris EVSTATIEV

Angel Kanchev University of Ruse

K4 ISOLDE: Building Blocks for High-Performance RISC-V System
Cătălin CIOBANU

Associate Professor, Senior Researcher, Transilvania University of Braşov, Romania

O3.1 ID81 RISC V Custom Function Unit for the Combinational Approximation for a Vector Norm

A. Andreas

Computer and Information Technology, Politehnica University, Timisoara, Romania

O3.2 ID121 Controlled Shape Droplet Translation in 3D via Helmholtz–Anti-Helmholtz Coil Switching

R. Alsangur, A. Turgut¹⁾, I. Ates²⁾, and L. Cetin³⁾

The Graduate School of Natural and Applied Sciences, Dokuz Eylül University, İzmir, Turkey

Department of Mechatronics Engineering, İzmir University of Economics, İzmir, Turkey

¹⁾ Department of Mechanical Engineering, Dokuz Eylül University, İzmir, Turkey

²⁾ Mechatronics Program, Technical Sciences Vocational School, Uşak University, Uşak, Turkey

³⁾ Department of Mechatronics Engineering, İzmir Kâtip Çelebi University, İzmir, Turkey

O3.3 ID158 Reconstructing Missing Dam Displacement Data from Ambient Temperature Using Regression and Kalman Smoothing

A. Flutur and S. Pop

Applied Electronics Department, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

11:15 - 12:45 **Poster Session 3 (Starts with a video pitching session in the plenary room, followed by discussion at the poster)**

EEST | GMT +3h

Session Chair: Mihai BRÂNZEI, National University of Science and Technology Politehnica Bucharest, Romania

Session Co-Chair: Adriana BORODZHIEVA, Angel Kanchev University of Ruse, Bulgaria

P3.1 ID36 Automotive Head-Up Displays: Optical Principles, Enabling Technologies and Current Challenges

M.A. Mocanu, O.M. Datcu, D.M. Moise, M. Nistor, and R. Ciobanu

Faculty of Mechanical Engineering and Mechatronics, National University of Science and Technology Politehnica Bucharest (UNSTPB), Bucharest, Romania

P3.2 ID39 Detection and Classification of Assembly Defects in SMT Assembly Processes Using Computer Vision Techniques

A. T. Hrabac, O. Vuap, G. I. Sacuiu, R. R. Ciobanu and C. Florea¹⁾

Mechatronics and Precision Mechanics Department, National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

¹⁾ Applied Electronics and Information Technology Department, National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

P3.3 ID62 Dynamic Characterization of Electromechanical Disturbance Transmission in a Roll-to-Roll Digital Twin Prototype for Printed Electronics

R. Covaci, R. Gălătuș, L. Szolga

Faculty of Electronics, Telecommunications and Information Technology, Technical University of Cluj Napoca, Cluj Napoca, Romania

P3.4 ID67 A Deterministic SCADE Architecture for Safe Automotive Over-the-Air Updates

M. Grosu¹⁾, R. Fizesan¹⁾, G. Flutur²⁾, and O. Pop¹⁾

¹⁾ Faculty of Electronics, Telecommunications and Information Technology, Technical University of Cluj-Napoca, Romania

²⁾ Faculty of Automation and Computer Science, Technical University of Cluj-Napoca, Romania

P3.5 ID69 Speeding Up Cryptography: A Survey on Algorithms Acceleration

Ș.-C. Tănăsescu¹⁾, C. B. Ciobanu^{1), 2)}

¹⁾ Transilvania University of Brasov, Romania

²⁾ National Institute of Research and Development in Microtechnologies, Bucharest, Romania

P3.6 ID73 Hardware-Software Co-Design and Virtual Validation Methods for Reducing Energy Consumption, Execution Time, and Certification Effort in Automotive Systems: A Comparative Study

G. Flutur¹⁾, A. I. Ilies²⁾, C. Corches¹⁾, and R. Jánó²⁾

¹⁾ Automation Department, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

²⁾ Applied Electronics Department, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P3.7 ID104 Digital-Twin-Based Vital-Sign Monitoring

C. Onofrei, L. Viman, I. Baci, V. Bande and V. Veliciu

Applied Electronics Department, Faculty of Electronics, Telecommunications and Information Technology, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P3.8 ID118 kt-fsv: An Open-Source Implementation and Reproducibility Audit of IEEE Std 1597.1-2022 Feature Selective Validation

R. Voina, M. Daraban, L. Viman and O. Pop

Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P3.9 ID153 Thermal Model Optimization of PCBAs for High-Current Testing of SMD Components

Z. Tafferger, A. Géczy

Department of Electronics Technology, Faculty of Electrical Engineering and Informatics, Budapest University of Technology and Economics, Budapest, Hungary

P3.10 ID175 TrustBridge-IoT: Cross-Layer Trust Management for Heterogeneous Automotive-IoT Infrastructures

A.A. Maftai, A. Lavric, A.I. Petrariu and V. Popa

Computers, Electronics and Automation Department, Stefan Cel Mare University of Suceava, Suceava, Romania

P3.11 ID176 Robust Waveforms for Automotive Communications: OTFS and OFDM in High-Mobility Scenarios

L. Ștefan and A. Lavric

Faculty of Electrical Engineering and Computer Science, Stefan Cel Mare University of Suceava, Suceava, Romania

P3.12 ID34 Comparative Analysis of Free and Commercial Simulation Tools for Power-Aware PCB Design in Engineering Education

E.-M. Grosu, A. Chioreanu, M.-C. Mareş, B. Mihăilescu, and P. Svasta

Centre for Technological Electronics and Interconnection Techniques, National University of Science and Technology POLITEHNICA Bucharest, Romania

P3.13 ID40 Alternative Learning Method for the Working Principle of Shift Register Circuits

N. C. Rohatinovici¹⁾, A. N. Dărau¹⁾, M. M. Nan¹⁾, M. Andraş¹⁾, and R. Rotar²⁾

¹⁾ Regina Maria Technological Highschool, Arad, Romania

²⁾ Department of Computer Science, Politehnica University, Timisoara, Romania

P3.14 ID46 Empirical Evaluation of LLMs for Automotive Requirements Engineering

P. L. Popescu-Cevei^{1,2)}, A. A. Rindasu^{1,3)}

1) AUMOVIO Romania, Timisoara, Romania

2) Universidad Americana de Europa, Mexico

3) Gheorghe Asachi Technical University of Iasi, Faculty of Electronics, Telecommunications and Information Technology, Iasi, Romania

P3.15 ID58 A Fredkin Only Construction of a Reversible Four-Input Multiplexer and Its Application to Three-Variable Boolean Synthesis

A. N. Borodzhieva

Department of Telecommunications, Angel Kanchev University of Ruse, Ruse, Bulgaria

P3.16 ID80 Exploring Reversible Digital Design via Toffoli Based Three Input Decoders and Function Synthesis

A. N. Borodzhieva

Department of Telecommunications, Angel Kanchev University of Ruse, Ruse, Bulgaria

P3.17 ID91 Autonomous Driving and Electromobility: An Interdisciplinary Online Course Developed within the TRIREME Project

B. Medgyes¹⁾, A. Gharaibeh¹⁾, S. Danieli²⁾, M. Di Frangia²⁾, E. Somano²⁾, M. Spanyol³⁾, and J. Stolfi³⁾

¹⁾ Department of Electronics Technology, Budapest University of Technology and Economics, Faculty of Electrical Engineering and Informatics, Budapest, Hungary

²⁾ Mylia – Adecco Formazione, Milan/Italy

³⁾ Department of Computer Science, VSB – Technical University of Ostrava, Faculty of Electrical Engineering and Computer Science, Ostrava, Czechia,

P3.18 ID109 Design and Implementation of a Web-Based Classroom Reservation System for Academic Environments

A.-I. Costea, R. János¹⁾

Faculty of Electronics, Telecommunications and Information Technology, Cluj-Napoca, Romania

¹⁾ Department of Applied Electronics, Faculty of Electronics, Telecommunications and Information Technology, Cluj-Napoca, Romania

P3.19 ID128 CardioSight: A Deep Learning Platform for Cardiac MRI

C. B. Ciobanu^{1,2)} and M.C. Saulea²⁾

¹⁾ National Institute of Research and Development on Microelectronics, Romania

²⁾ Transilvania University of Braşov, Integrated Systems Master's Degree, Romania

P3.20 ID148 Raising Awareness by Digital Education in Cybersecurity for Electronic Designers

L. Scripcariu, F. Mocanu, A. M. Mazilu, C. V. Tanasă, I. Bogdan, R. G. Bozomitu
Gheorghe Asachi Technical University of Iași, Romania

P3.21 ID162 Design and Educational Simulation of Reversible Half Subtractor and Full Subtractor Using TSG Gates in Logisim

A. N. Borodzhieva
Department of Telecommunications, Angel Kanchev University of Ruse, Ruse, Bulgaria

P3.22 Beyond Headline Accuracy: Quantitative Analysis of Machine-Learning Fault Diagnosis Evidence for Reliable Electronics

Ioana R. Goldbach¹⁾, Felix G. Hamza-Lup²⁾, Nicoleta Angelescu³⁾

1) Department of Management, Valahia University of Târgoviște, Târgoviște, Romania

2) Department of Computer Science Georgia Southern University, Georgia, USA

3) Department of Electronics, Telecommunications and Energy Engineering, Valahia University of Târgoviște, Târgoviște, Romania

P3.23 A Comparative Latency Model for 2G/3G/4G/5G Mobile Networks Using Realistic Physical Parameters

Felicia Georgiana Chita, Nicoleta Angelescu, Gabriel Predusca, Ion Caciula, Liana Denisa Circumarescu, Dan Constantin Puchianu

Department of Electronics, Telecommunications and Energy Engineering, Valahia University of Targoviste, Targoviste, Romania

13:45 - 15:45
EEST | GMT +3h

Plenary Oral Session 4 (ONLINE/live presentations)

Session Chair: Alexandra FODOR, Technical University of Cluj-Napoca, Romania

Session Co-Chair: Cristina MARGHESCU, POLITEHNICA Bucharest, Romania

K5 News about RFID Antennas

Mihai GABOR
Technical University of Cluj-Napoca, Romania

O4.1 ID98 Optical Coherence Tomography Between X-ray Imaging and Scanning Electron Microscopy for Multiscale Material Characterization

R.-A. Erdelyi, and V.-F. Duma

3OM Research Group, Department of Measurements and Electro-Optics, Polytechnic University of Timișoara, Timișoara, Romania

O4.2 ID134 Methodology for Quantitative Evaluation of Void-Like Defects in BGA Solder Joints Using X-Ray Image Processing

R. C. Ionel, L. Mățiu-Iovan, M. A. Mercioni*, C. M. Drăgan, L. I. Cădăriu-Brăiloiu, B. L. Rădulescu

Politehnica University Timisoara, Timisoara, Romania

Quality Lab Technologies Automotive AUMOVIO Technologies Romania

O4.3 ID171 Differential Impedance Optimization of Wire Bond Package Interconnects Through Inductive Trace Compensation of Die-Pad Parasitic

O. Axinte, V. Cristescu, M. Taut, G. Chindris, M. Daraban

Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

15:45 - 17:10

Poster Session 4 (Starts with a video pitching session in the plenary room, followed by discussion at the poster)

EEST | GMT +3h

Session Chair: Cristian Marcel FARCAȘ, Technical University of Cluj-Napoca, Romania, Bulgaria

Session Co-Chair: Bogdan MIHĂILESCU, POLITEHNICA Bucharest, Romania

P4.1 ID56 Thermal Characterization of Electronic Systems: A Review of Standards, Methods, and Current Trends

V. Cristescu¹⁾, M. Oltean¹⁾, A. Fodor²⁾, I. Ciocan²⁾, C. Farcas²⁾

¹⁾ Faculty of Electronics, Telecommunications and Information Technology, Technical University of Cluj-Napoca, Cluj-Napoca, Romania,

²⁾ Applied Electronics Department, Faculty of Electronics, Telecommunications and Information Technology, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P4.2 ID102 Novel Aspects of Magnetic Component Design in LLC Converters

L. Manciu, D. Petreus

Applied Electronics, Technical University of Cluj-Napoca, Cluj, Romania

P4.3 ID123 Development of an Intelligent Sensorless Control Platform for BLDC/PMSM Motors with Model-in-the-Loop Validation

N. E. Bondric, M.A. Taut, G.Chindris, A. Taut

Applied Electronics Department, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P4.4 ID138 Experimental Benchmarking of Advanced and Conventional Silicon Power MOSFETs

D. Samoilă¹⁾, E. Vesa²⁾, V. Petrascu³⁾, A. Tulbure⁴⁾

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²⁾ National University of Science and Technology POLITEHNICA Bucharest, Romania

³⁾ National University of Science and Technology POLITEHNICA Bucharest, Romania

⁴⁾ Department of Informatics, Mathe & Electronics, 1 Decembrie 1918 University of Alba Iulia, Romania

P4.5 ID149 Thermal Design Optimization of Automotive Electronic Modules Through PCB and Hybrid Enclosure Architectures

A. Popovici, C. Fărcaș, I. Ciocan, A. Fodor

Department of Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P4.6 ID156 Nyquist Based Analogy of Reliability Prediction for PoL Input Capacitors with Hands-on Experimental Validation

D. Butnicu, D. Ionescu

Faculty of Electronics, Telecommunications and Information Technology, Gh.Asachi Technical University of Iasi, Romania

P4.7 ID157 Analysis of Housing Options and Passive Cooling Solutions for Quad Flat No-Lead Packages

M.C. Oltean, G. Nastuta, A. Fodor¹, C. Farcas¹, I. Ciocan¹, C. M. Dragan², C. Popescu², C. Alucai², L. Bodin²
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¹) Applied Electronics Department, Technical University of Cluj-Napoca, Cluj-Napoca, Romania,

²) AUMOVIO Technologies Romania SRL

P4.8 ID159 Co-Design of Photovoltaic Modules and MPPT Boost Converters: Investigating the Influence of Photovoltaic Characteristics on Converter Design

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¹) Department of Automatics & Electronics, Angel Kanchev University of Ruse, Bulgaria

²) Department of Telecommunications and Information Technologies, Gheorghe Asachi Technical University of Iasi, Romania

P4.9 ID55 Design of a Smart Monitoring System for Renewable Energy Communities Using IoT Technologies

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¹) Department Electronic and Telecommunication, Constanta Maritime University, Constanta, Romania

²) Doctoral School of ETIT, National University of Science and Technology POLITEHNICA Bucharest, Bucharest, Romania

P4.10 ID86 PSIM Model of PEM Fuel Cells with Boost Converter within a DC Microgrid

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¹) Electrical Machines and Drives, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P4.11 ID95 Comparative State of Charge Estimation for NCR18650B Lithium-Ion Cells Using Coulomb Counting and Regression Trees

M. Olteanu and D. Petreuş

Applied Electronics Department, Technical University of Cluj-Napoca, Romania

P4.12 ID97 Implementation of a Modular, Parameter-Driven Mathematical Simulation Model for PEM Fuel Cells

D. A. Bulugheană, and D. M. Petreuş

Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P4.13 ID105 WebGIS for Climate Resilience and Nature-Based Solutions

T. Pintilie, C. Dobre, R. Streche, A. Dănilă, A. Borbak, G. Suciu

R&D Department, BEIA Consult International, Bucharest, Romania

P4.14 ID113 An Autonomous Dust Removal System for Enhanced Efficiency of Photovoltaic Modules

A.-M. Rad¹, D. Csipkes², G. Csipkes², and E.-M. Stetco¹

¹) Applied Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

²) Bases Of Electronics, Technical University of Cluj-Napoca, Cluj-Napoca, Romania

P4.15 ID150 Small wind turbine architecture with stepper motor generator

R. Rizea, S. C. Olteanu, C. G. Lupu

National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

P4.16 ID154 Influence of PV Plant Configuration on the Energy Balance of Residential Buildings

E. Vesa¹⁾, A. Tulbure²⁾, O. C. Novac³⁾, M. Damian¹⁾, P. Barbat¹⁾

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P4.17 ID165 Comparative Characterization of Round and Rectangular Dye-Sensitized Solar Cells for Indoor Energy Harvesting

A. C. Popescu^{1),2)}, M. C. Mareş^{1),2)}, D. Ursu³⁾, M. Miclau³⁾, R. C. Negroiu^{1),2)}, C.I. Marghescu¹⁾, P. M. Svasta¹⁾

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P4.18 ID37 Experimental Platform for Measuring Pixel Transition Dynamics in Automotive Displays

D. M. Moise, O. M. D. Datcu, B. E. Preoteasa, M. Zanfir and I. Grămescu

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P4.19 ID126 Reliability Impact of Flat Wire Inductor Technology in PoL Converters: A MIL HDBK 217F and IR-Thermography Investigation

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²⁾ Electronics Department, Technical College Remus Radulet, Brasov, Romania

P4.20 ID127 The Link Between PoL Converter Reliability and CO2 Footprint Reduction: Focus on Output Capacitors

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²⁾ Electronics Faculty, Ghe. Asachi Technical University of Iasi, Iasi, Romania

P4.21 ID110 A Secure, Power-Optimized Autonomous Mobile Robot with Real-Time Telemetry and Maze-Solving Capabilities

D. Pescariu, V. Tomoiagă, A. Zăuleţ, and A. Grama

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P4.22 ID112 Wideband UHF Spectrum Mapping System using USRP E310

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