

Monday, October 16<sup>th</sup>

08.30 Registration

**MINI-COLLOQUIUM "NANOELECTRONICS AND NANODEVICES"** (Room on the roof)

09.30-09.40 Danijel Danković, *IEEE EDS, Introductory*

09.40-09.45 Zlatica Marinković, *IEEE Serbia and Montenegro Section*

09.45-10.10 MQ1 Simon Deleonibus, *Sustainable Convergence in the Nanoelectronics and Nanosystems Era*

10.10-10.40 MQ2 Hei Wong, *Towards Ultimate MOS*

10.40-11.00 Coffee break

11.00-11.30 MQ3 Enrique Alberto Miranda Castellano, *Compact Modeling of Memristive Devices for Neuromorphic Computing*

11.30-11.55 MQ4 Adelmo Ortiz-Conde, *Recent Applications of Polylogarithms in MOSFET Modeling*

11.55-12.10 Coffee break

12.10-12.40 MQ5 Tibor Grasser, *Insulators for Transistors made from 2D Materials*

12.40-13.05 MQ6 Adrian Ionescu, *Low Power Ferroelectric FETs for Beyond CMOS*

13.05-13.30 MQ7 Enrico Sangiorgi, *Wide Band Gap Power Devices*

13.30-14.30 Lunch

## MIEL CONFERENCE PROGRAMME (Room on the roof)

### PLENARY SESSION 1

- 14.30-15.00 INV1 Zoran Petrović, *How Non-Equilibrium Processes in Low Temperature Plasmas Facilitate Their Modern Applications*  
15.00-15.30 INV2 Miloš Krstić, *Resiliency in Digital Processing Systems*  
15.30-16.00 INV3 Goran Stojanović, *Innovative Results in Non-Conventional Electronics - Textile and Green Electronics*

16.00-16.30 Coffee break

### REGULAR SESSION 1 (Room 155)

#### *Device Physics and Characterization*

- 16.30-16.45 Vladimir Dj. Vukić, *Characterization of the Serial NPN Power Transistor in a Negative Voltage Regulator Operating in Various X-ray Environments*  
16.45-17.00 Dalibor L. Sekulić, *Characterization of Humidity Sensor Based on Nanostructured Porous LNTO Ceramics*  
17.00-17.15 Dalibor L. Sekulić, *X-Band Cylindrical Dielectric Resonator Based on Lithium-Niobium-Titanium-Oxide Microwave Ceramics*  
17.15-17.30 Kristina O. Čajko, *Electrical Characteristics of Chalcogenide Doped with Silver as Active Layer in Memristive Devices*

### REGULAR SESSION 2 (Room 156)

#### *System Design and Testing*

- 16.30-16.45 Stefan D. Ilić, *Laser-Induced Graphene Sensing for Wearable Respiratory Monitoring System*  
16.45-17.00 Aleksandar Gavrić, *A System for Detection and Tracking of Oculo-Vestibular Complications Associated with Extended Reality Headset Usage*  
17.00-17.15 Miona Tomić, *Wearable ECG Smart Patch for Mass Casualty Emergency Situations*  
17.15-17.30 Mihajlo Milovanović, *Development of smart beehive frame for multi-parameter monitoring*

### 18.00 CONFERENCE OPENING

18.30 Welcome Cocktail (Restaurant 154)

Tuesday, October 17<sup>th</sup>

08.30 Registration

**REGULAR SESSION 3** (Room 155)

***Circuit Design and Testing***

09.00-09.15 Claudio Moraga, *Design of a ternary Fredkin reversible gate*

09.15-09.30 Marija Petrović, *A Design Generator of Two Dimensional Cell Averaging Constant False Alarm Rate Processors*

09.30-09.45 Tomasz Talaška, *A Programmable, High-Speed Logic Gate for Hardware Implementations of Self-Organizing Artificial Neural Networks and Pattern Recognition Systems*

09.45-10.00 Alexander Ermakov, *The 4 Watt UHF VDMOS Power Amplifier for Space Applications*

10.00-10.15 Marko Andjelkovic, *Voltage Glitch Filter and Detector with Self-Checking Capability for FPGA Implementation*

10.15-10.40 Coffee break

**REGULAR SESSION 5** (Room 155)

***Device Technology and Characterization***

10.40-11.00 INV4 Albena Paskaleva, *A Complex Approach to Assess Traps and Defects and Their Influence on the Performance and Reliability of Charge Trapping Flash Memories*

11.00-11.15 Mariya Aleksandrova, *Spray Deposition of Conjugated Polymer/Graphene Ink as an Electrode in Chemical Biosensing Devices*

11.15-11.30 Gady Golan, *Photoinduced Currents (Nanoamperes) at Single Crystalline Cadmium Telluride Surfaces Analyzed at Ambient by Scanning Tunneling Microscopy*

11.30-11.45 Marko Obradov, *MXene Nanostrip Plasmonic Metamaterials for Mechanical Sensing and Enhanced Optical Absorption*

**REGULAR SESSION 4** (Room 156)

***Modeling and Simulation 1***

09.00-09.15 Vladimir Grimalsky, *Resonant Nonlinear Scattering of Terahertz Waves on The Periodic System of Graphene Strips*

09.15-09.30 Vladimir Dj. Vukić, *Short-term Recovery Effect in a Power Integrated Circuit Exposed to X-Rays*

09.30-09.45 Gordana Jovanovic Dolecek, *Design of Compensator for Chebyshev Sharpened Comb Filter*

09.45-10.00 Biljana Stošić, *Hints on using CIC-based FIR Filters in Practice*

**REGULAR SESSION 6** (Room 156)

***Modeling and Simulation 2***

11.00-11.15 Gagnesh Kumar, *Design of An Energy-Efficient SRAM Cell with Optimum Cell Ratio*

11.15-11.30 Marko Andjelković, *Prediction of Generated Single Event Transient Pulse Width Using Artificial Intelligence Methods*

11.30-11.45 Akash Patnaik, *Forward Bias Gate Leakage Mechanism in  $\delta$ -doped  $\beta$ -(Al<sub>x</sub>Ga<sub>1-x</sub>)<sub>2</sub>O<sub>3</sub>/Ga<sub>2</sub>O<sub>3</sub> HFET*

11.45-12.00 Zlatica Marinkovic, *Robustness Validation of a mm-Wave Model based on GRU Neural Networks for a GaN Power HEMT*

12.00-13.00 **POSTER SESSION 1** (Room 157)

- A1 Dencho Spassov, *Characterization of the electric breakdowns in Metal-Insulator-Silicon capacitor structures with HfO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> layers for non-volatile memory applications*
- A2 Puja Ghosh, *Electrical Characteristics and Reliability Analysis of Hetero-dielectric Dual Tunnel Diode TFET*
- A3 Arseniy A. Baluev, *Optical Glasses Transmittance Reduction under Gamma Radiation Exposure at Different Temperatures*
- A4 Neda Stanojević, *Electro-Acoustic Analogies Between Thermoelastic Photoacoustic Response and RC filters*
- A5 Stefan Radovanović, *Memristive Multi-Layer Reconfigurable Dual-Band Bandpass Filter*
- A6 Padmanabhan Balasubramanian, *A Monotonic Asynchronous Full Adder*
- A7 Miloš Marjanović, *Effectiveness of Microporous Ceramic Heatsinks in Thermal Energy Harvesting Systems*
- A8 Milan Stojanović, *Magnetic Field Generator for Testing the Operation of Vehicle Detection Sensors*
- A9 Dragana Živaljević, *Comprehensive Analysis of Monic-Chebyshev Polynomials for Microwave Filters Design*
- A10 Vesna Paunović, *Influence of Grain Growth on Electric Properties of Er-Doped BaTiO<sub>3</sub>*
- A11 Ivana O. Mladenović, *Metal Matrix Composite Coatings Based on Ni Matrix and Biosilica Filers Obtained from Rice Husks*
- A12 Aleksandra Stanković, *MgO as an Additional Layer at the Input Side of the Microchannel Plate*
- A13 Rade Tomov, *Palladium Films as Electrodes on Carbyne-Based Devices*
- A14 Ivanka Stanimirović, *Thick Resistive Film Application on Steel Beams for Structural Health Monitoring*
- A15 Zdravko Stanimirović, *Photothermal Pulse Response Analysis of Thin Solid Films in Time-Domain Based on Electro-Thermal Analogies*

13.00-14.00 Lunch

**PLENARY SESSION 2** (Room 155)

- 14.00-14.30 INV5 Trupti R. Lenka, *III-Nitride Nanowire LEDs for Enhanced Light Technology*
- 14.30-15.00 INV6 Boualem Djeddar, *Application of Charge Pumping Technique for MOSFET Devices Reliability*

15.00-15.30 Coffee break

**PLENARY SESSION 3** (Room 155)

- 15.30-16.00 INV7 Janez Krč, *Photonic Integration on Silicon-Based Platform*
- 16.00-16.30 INV8 Olaf Wittler, *Warpage modelling in Fan-Out Wafer Level Packaging - Challenges and solutions*

## 16.30-17.30 POSTER SESSION 2 (Room 157)

- B1 Piotr Bogacki, *A Parallel and Asynchronous Blob Shape Descriptor Implemented in CMOS Technology*
- B2 Aleksandar Jevtić, *Utilisation of Raspberry Pi 4 and RP2040 microcontroller for PID measurement and control*
- B3 Jelena Pejić, *IoT enabled bee hive monitoring system*
- B4 Giovanna Mura, *Electronics Components Authentication via Physical Analysis*
- B5 Dušan Todorović, *Failure Mechanisms Analysis for Integrated and Analog Position Sensors in Safety Relevant Automotive Use Cases*
- B6 Yuriy Rapoport, *Terahertz Nonlinear Waves and Collapsing Pulses in Hyperbolic Metamaterials Dielectric - Semiconductor*
- B7 Ivana Jokić, *Modeling of Intrinsic Noise in Adsorption-Based Micro/Nanobiosensors Considering Biomolecular Rearrangement on the Sensing Surface*
- B8 Sandra Veljković, *Using TCAD Simulations to Verify the McWhorter Method for Assessing Trapped Charge in Dielectric*
- B9 Ksenija Pešić, *Efficient Neural Model of the Coplanar Inverted-F antenna based on MLP networks*
- B10 Natalija Ivković, *Helmholtz and Maxwell Coils Analysis using FEMM 4.2*
- B11 Milic Pejovic, *Response of RADFETs to Photon Ionizing Radiation and Subsequent Recovery at Room and Elevated Temperature*
- B12 I. Ruiz-García, *Temperature Effects on the Sensitivity of Gamma MOSFET Dosimeters*
- B13 Emilija Živanović, *Breakdown Voltage Stability Testing of Gas Surge Arrester Littelfuse CG2300 Under Different Environmental Conditions*
- B14 Marija Blagojević, *Prediction of Pollen Levels Using Machine Learning Techniques*
- B15 Dragan Veljković, *Classifier Fusion Based on Gaussian Mixtures Models (GMM) and Support Vector Machine (SVM) in the Function of Classification Emotional Speech, Using Spectral and Prosody Features*
- B16 Aleksandar Gavrić, *Physics-Driven Methods for Adaptive Optics Effect in Extended Reality: Eliminating the Need for Corrective Lenses*
- B17 Ivana Jokić, *Adsorption-Based Micro/Nanosensors for Protein Detection: Influence of Protein Conformation Changes and Analyte Depletion on the Sensor Response*

20.00 **GALA DINNER** (Nišlijaska mehana)

Wednesday, October 18<sup>th</sup>

09.00-09.30 **Reception at the City Hall**

09.30-12.00 **Niš Sightseeing tour**

12.00 **Registration**

12.00-13.00 Lunch

**SPECIAL SESSION 7** (Room 155)

***Devices and Systems in Radiation Environment***

13.00-13.20 INV9 Ercan Yilmaz, *High-k Dielectric RADFET for Detection of RN Treats*

13.20-13.35 Racheal Chirwa, *Investigation of annealing temperature and gamma irradiation on HfO<sub>2</sub>/Dy<sub>2</sub>O<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub>/n-Si (100) Memory Capacitor*

13.35-13.50 Milos Marjanovic, *SPICE Modeling of RADFETs with Different Gate Oxide Thicknesses*

13.50-14.05 Nikola Mitrović, *Consecutive Irradiation and Thermal Annealing of Commercial p-Channel Power VDMOSFETs*

14.05-14.20 Sandra Veljkovic, *Effects in Commercial p-Channel Power VDMOS Transistors Initiated by Negative Bias Temperature Stress and Irradiation*

**REGULAR SESSION 8** (Room 156)

***Advanced Approaches in Engineering and Education***

13.20-13.35 Zorica Bogdanović, *Open Innovation Strategies in Engineering Education*

13.35-13.50 Aditi Sudhir, *A Machine Learning Approach to Spam Detection in Social Media Feeds*

13.50-14.05 Nenad Petrović, *ChatGPT in IoT Systems: Arduino Case Studies*

14.05-14.20 Lazar Stankovic, *Performance Evaluation of YOLO Models for Automatic Crop and Weed Detection*

14.20-14.35 Milos Marjanovic, *Is Microelectronics Recognizable in Serbian School System?*

14.35-15.15 **Laboratory tour** (Room 371 and 372)

15.15 **CONFERENCE CLOSING** (Room on the roof)  
**BEST PAPER AWARDS**