

# PROGRAMME

## 31<sup>st</sup> INTERNATIONAL CONFERENCE ON MICROELECTRONICS

Niš, Serbia  
September 16<sup>th</sup>-18<sup>th</sup>, 2019



organized by

IEEE Serbia and Montenegro Section - ED/SSC Chapter



in cooperation with

Serbian Academy of Sciences and Arts - Branch in Niš  
Faculty of Electronic Engineering, University of Niš



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# MINI-COLLOQUIUM ON NANO- AND FLEXIBLE- ELECTRONICS

**Monday, September 16<sup>th</sup>**

UNIVERSITY OF NIŠ, Univerzitetski trg 2, Niš

- 12:00 **Registration**
- 13:45 **Introductory Remarks and Opening Address**  
Ninoslav Stojadinović, University of Niš, Serbia  
Chairmen: Muhammad Mustafa Hussein, KAUST, Saudi Arabia  
Arokia Nathan, Cambridge Touch Technologies, UK
- 14:00 **Quantum Engineering of Low-Dimensional Nanoensembles**  
Vijay Arora, Wilkes University, PA, USA
- 14:30 **New Routes and Paradigms in Device Engineering for Nanoelectronics and Nanosystems**  
Simon Deleonibus, CEA/LETI, France
- 15:00 **On the ESD Protection and Non-Fatal ESD Strike on Nano CMOS Devices**  
Hei Wong, City University of Hong Kong, Hong Kong
- 15:30 **Coffee Break**  
Chairmen: Simon Deleonibus, CEA/LETI, France  
Vijay Arora, Wilkes University, PA, USA
- 16:00 **Flexible CMOS Electronics for Environmental Applications**  
Muhammad Mustafa Hussein, KAUST, Saudi Arabia
- 16:30 **Ultra Low Sensor Interfaces for the IoT Flexible Electronics**  
Arokia Nathan, Cambridge Touch Technologies, UK
- 17:00 **CMOS-Compatible Gas Sensors**  
*Guest SASA*  
Siegfried Selberherr, Technical University of Vienna, Austria

## CONFERENCE PROGRAMME

**Monday, September 16<sup>th</sup>**

UNIVERSITY OF NIŠ, Univerzitetski trg 2, Niš

- 18:00 **Opening Session**  
Chairmen: N. Stojadinović, University of Niš, Serbia  
A. Nathan, Cambridge Touch Technologies, UK  
S. Dimitrijević, Griffith University, Nathan, Australia  
S. Selberherr, Technical University Wien, Austria  
H. Wong, City University of Hong Kong, Hong Kong
- 18:30 **Welcome Cocktail**

# CONFERENCE PROGRAMME

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

FACULTY OF ELECTRONIC ENGINEERING, Aleksandra Medvedeva 14, Niš

- SESSION: DEVICE PHYSICS, TECHNOLOGY AND CHARACTERIZATION 1 Room A**  
Chairmen: D. Vasiljević Radović, University of Belgrade, Serbia  
S. Dimitrijević, Griffith University, Nathan, Australia
- 8:30 **On the Ballistic Transport in Si Nano-Devices**  
G. Golan, M. Azoulay, J. Bernstein  
Ariel University, Ariel, Israel
- 8:45 **Impact of  $\gamma$  Radiation on Charge Trapping Properties of Nanolaminated  $\text{HfO}_2/\text{Al}_2\text{O}_3$  ALD Stacks**  
D. Spassov<sup>1</sup>, A. Paskaleva<sup>1</sup>, V. Davidović<sup>2</sup>, S. Djorić-Veljčković<sup>2</sup>, S. Stanković<sup>3</sup>,  
N. Stojadinović<sup>4</sup>, Tz. Ivanov<sup>1</sup>, T. Stanchev<sup>1</sup>  
<sup>1</sup>Bulgarian Academy of Sciences, Sofia, Bulgaria,  
<sup>2</sup>University of Niš, Serbia  
<sup>3</sup>University of Belgrade, Serbia  
<sup>4</sup>Serbian Academy of Sciences and Arts (SASA), Belgrade, Serbia
- 9:00 **Determination Method for Interface State Densities Adapted to Ultrathin Dielectrics**  
N. Novkovski and A. Skeparovski  
University "Ss. Cyril and Methodius", Skopje, North Macedonia
- 9:15 **Feasibility of Applying an Electrically Programmable Floating-Gate MOS Transistor in Radiation Dosimetry**  
S. Ilić<sup>1</sup>, A. Jevtić<sup>1</sup>, S. Stanković<sup>2</sup>, V. Davidović<sup>1</sup>  
<sup>1</sup>University of Niš, Serbia  
<sup>2</sup>University of Belgrade, Serbia
- 9:30 **Heavy-Ion-Induced Single Event Burnout in SiC Schottky Diodes: Safe Operating Area**  
P. S. Gromova<sup>1</sup>, G. G. Davydov<sup>1</sup>, A. S. Tararaksin<sup>1</sup>, A. S. Kolosova<sup>1</sup>,  
D. V. Boychenko<sup>1</sup>, V. N. Vyuginov<sup>2</sup>, V. V. Luchinin<sup>2,3</sup>  
<sup>1</sup>MEPhI, Moscow, Russia  
<sup>2</sup>Svetlana-Electronpribor JSC, St. Petersburg, Russia  
<sup>3</sup>Saint Petersburg Electrotechnical University "LETI", Russia
- 9:45 **Fabrication and Characterization of High-k Dielectrics Based Gate Stacks/MOS capacitors for Advanced CMOS Devices**  
R. Vaid, R. Gupta  
University of Jammu, India
- 10:00 **In-depth Structure and Electrical Characteristics Study of HfOx-based Resistive Random Access Memories (ReRAMs) with High On-Current and reduced Turn-on Voltage**  
B. Attarimashalkoubeh, Y. Leblebici  
École polytechnique fédérale de Lausanne (EPFL), Switzerland

- 10:15 **Coffee Break**
- 10:30 **Tutorial on Power Devices and Modules** **Room A**  
 Chairman: S. Selberherr, Technical University Wien, Austria
- High-Fidelity Predictive Simulation of High Power Devices and Modules at the Rim of the Safe-Operating Area and Beyond**  
 G. Wachutka  
 Technical University of Munich, Germany
- 11:15 **Coffee Break**
- SESSION: DEVICE PHYSICS, TECHNOLOGY AND CHARACTERIZATION 2** **Room A**  
 Chairmen: A. Paskaleva, Bulgarian Academy of Sciences, Sofia, Bulgaria  
 V. Pershenkov, MEPhI, Moscow, Russia
- 11:30 **Strong Electric Monopulses in Nonuniformly Doped Nitride Films under Negative Differential Conductivity**  
 V. Grimalsky, S. Koshevaya, J. Escobedo-A., J. Sanchez-S.  
 Autonomous University of State Morelos, Cuernavaca, Mexico
- 11:45 **Arrays of Bowtie Plasmonic Nanoantennas for Field Enhancement in MOEMS**  
 M. Obradov, Z. Jakšić, I. Mladenović, D. Tanasković, O. Jakšić  
 University of Belgrade, Serbia
- 12:00 **Reviewing MXenes for Plasmonic Applications: Beyond Graphene**  
 Z. Jakšić, M. Obradov, O. Jakšić, D. Tanasković, D. Vasiljević Radović  
 University of Belgrade, Serbia
- 12:15 **Nanocrystalline Porous Nickel Ferrite Ceramics for Humidity Sensing Applications**  
 D. L. Sekulic<sup>1</sup>, Z. Z. Lazarevic<sup>2</sup>, N. Z. Romcevic<sup>2</sup>  
<sup>1</sup>University of Novi Sad, Serbia  
<sup>2</sup>University of Belgrade, Serbia
- 12:30 **D-Mode pHEMT 0.5 um Process Characterization to Wide-Band LNA Design**  
 D. I. Sotskov, N. A. Usachev, V. V. Elesin, A. G. Kuznetsov, K. M. Amburkin,  
 G. V. Chukov, M. I. Titova, N. M. Zidkov  
 MEPhI, Moscow, Russia
- 12:45 **Practical Evaluation of Optocouplers TID-Hardness Research Method Using an X-ray Unit**  
 S. V. Novikov, M. E. Cherniak, R. K. Mozhaev, D. V. Boychenko  
 MEPhI, Moscow, Russia
- 13:00 **Proton Accelerator's Direct Ionization Single Event Upset Test Procedure**  
 A. O. Akhmetov<sup>1</sup>, G. S. Sorokoumov<sup>1</sup>, A. A. Smolin<sup>1</sup>, D. V. Bobrovsky<sup>1</sup>,  
 D. V. Boychenko<sup>1</sup>, A. Y. Nikiforov<sup>1</sup>, A. E. Shemyakov<sup>2</sup>  
<sup>1</sup>MEPhI, Moscow, Russia  
<sup>2</sup>Russian Academy of Sciences, Protvino, Russia
- 13:15 **Lunch** **Restaurant**

<b>SESSION</b>	<b>PLENARY SESSION</b>	<b>Room A</b>
	Chairmen: H. Wong, City University of Hong Kong, Kowloon, Hong Kong G. Wachutka, Technical University of Munich, Germany	
14:30	<b>The Fundamental Current Mechanisms in SiC Schottky Barrier Diodes: Physical Model, Experimental Verification and Implications</b> S. Dimitrijević, J. Nicholls, P. Tanner, J. Han Griffith University, Nathan, Australia	
15:00	<b>Design Techniques for Wireless Sensor Network Nodes Powered by Ambient Energy Harvesting</b> Z. Prijić, A. Prijić, Lj. Vračar University of Niš, Serbia	
15:30	<b>Hardware/Software Co-Design of Wireless LAN Transceiver: A Case Study</b> Z. Stamenković <sup>1</sup> , K. Tittelbach-Helmrich <sup>1</sup> , M. Krstić <sup>1,2</sup> , M. Stojčević <sup>3</sup> , B. Dimitrijević <sup>3</sup> <sup>1</sup> IHP, Frankfurt (Oder), Germany <sup>2</sup> University of Potsdam, Germany <sup>3</sup> University of Niš, Serbia	
16:00	<b>Coffee Break</b>	
16:30-17:30	<b>POSTERS 1</b>	
<b>SESSION:</b>	<b>DEVICE PHYSICS, TECHNOLOGY AND CHARACTERIZATION</b>	<b>Lobby</b>
	Chairmen: G. Golan, Ariel University, Israel V. Grimalsky, Autonomous University of State Morelos, Cuernavaca, Mexico	
A1	<b>Reliability of Various Type of Gas-filled Surge Arresters Under DC Discharge</b> E. Živanović, S. Veljković, M. Živković, M. Pejović University of Niš, Serbia	
A2	<b>Effect of Rare-Earth Ions on Electrical Properties of BaTiO<sub>3</sub> Ceramics</b> V. Paunović, M. Đorđević, V. Mitić, Z. Prijić University of Niš, Serbia	
A3	<b>Generation of Harmonics of Terahertz Radiation in Paelectrics in a Wide Temperature Range</b> V. Grimalsky, S. Koshevaya, J. Escobedo-A., Y. Gomez-B. Autonomous University of State Morelos, Cuernavaca, Mexico	
A4	<b>Study of Nanoporous Anodic Aluminum Oxide as a Template Filled with Piezoelectric Materials</b> T. Tsanev, M. Aleksandrova, V. Videkov Technical University of Sofia, Bulgaria	
A5	<b>An AlSiN Nanocomposite Film with Improved Mechanical Parameters for Multifunctional Applications</b> L. Kolaklieva, R. Kakanakov, T. Cholakova, H. Bahchedzhiev, V. Chitanov Bulgarian Academy of Sciences, Plovdiv, Bulgaria	

- A6 **Artificial Neural Network for Composite Hardness Modeling of Cu/Si Systems Fabricated Using Various Electrodeposition Parameters**  
I. Mladenović, J. Lamovec, V. Jović, M. Obradov, K. Radulović,  
D. Vasiljević Radović, V. Radojević  
University of Belgrade, Serbia
- A7 **Modeling Errors of the MISFET-Based Sensors' Characteristic**  
B. Podlepetsky, N. Samotaev  
MEPhI, Moscow, Russia
- A8 **Flexible Oxide-Polymeric Composites for Piezoelectric Energy Harvesting**  
M. Aleksandrova, G. Kolev, Y. Vucheva, I. Pandiev, K. Denishev  
Technical University of Sofia, Bulgaria
- A9 **Pt Resistive Film Sensors**  
Z. Stanimirović, I. Stanimirović  
Institute for Telecommunications and Electronics IRITEL Belgrade, Serbia
- A10 **High-Voltage Pulse Trimming of Thick-Film Resistors – Some Modelling Aspects**  
I. Stanimirović, Z. Stanimirović  
Institute for Telecommunications and Electronics IRITEL, Belgrade, Serbia
- A11 **SnO<sub>2</sub>-Pd as a Gate Material for the Capacitor Type Gas Sensor**  
N. Samotaev, K. Oblov, A. Litvinov, M. Etrekova  
MEPhI, Moscow, Russia
- A12 **Rapid Prototyping of MOX Gas Sensors in Form-factor of SMD Packages**  
N. Samotaev, K. Oblov, A. Ivanova, A. Gorshkova, B. Podlepetsky  
MEPhI, Moscow, Russia
- A13 **Analysis of Intrinsic Stochastic Fluctuations of the Time Response of Adsorption-Based Microfluidic Bio/Chemical Sensors: The Case of Biantalyte Mixtures**  
I. Jokić<sup>1</sup>, Z. Djurić<sup>2</sup>, K. Radulović<sup>1</sup>, M. Frantlović<sup>1</sup>, P. M. Krstajić<sup>1</sup>  
<sup>1</sup>University of Belgrade, Serbia  
<sup>2</sup>Serbian Academy of Sciences and Arts, Belgrade, Serbia
- A14 **Modeling Noise and Stability of Affinity-Based MEMS, NEMS and NOEMS Sensors of Ternary Gas Mixtures**  
O. Jakšić, I. Jokić, Z. Jakšić, M. Obradov, D. Tanasković, D. Randjelović,  
D. Vasiljević Radović  
University of Belgrade, Serbia
- A15 **Effects of Endspoiling on Microchannel Plate Performance**  
A. Stanković<sup>1</sup>, I. Zlatković<sup>1</sup>, R. Nikolov<sup>2</sup>, B. Brindić<sup>3</sup>, D. Pantić<sup>1</sup>  
<sup>1</sup>University of Niš, Serbia  
<sup>2</sup>Photon Optronics, Niš, Serbia  
<sup>3</sup>Sova HD, Niš, Serbia
- A16 **Electrical Characteristics of Ag<sub>10</sub>(As<sub>40</sub>S<sub>30</sub>Se<sub>30</sub>)<sub>90</sub> as Resistive Switching Material for Potential Application in Memory Devices**  
K. O. Čajko, D. L. Sekulić, D. M. Petrović, T. B. Ivetić, S. R. Lukić–Petrović  
University of Novi Sad, Serbia
- A17 **Modelling of  $\Delta V_T$  in NBT Stressed P-Channel Power VDMOSFETs**  
N. Mitrović<sup>1</sup>, D. Danković<sup>1</sup>, Z. Prijjić<sup>1</sup>, N. Stojadinović<sup>2</sup>  
<sup>1</sup>University of Niš, Serbia  
<sup>2</sup>Serbian Academy of Sciences and Arts, Belgrade, Serbia



- A18 **Comparison of Radiation Characteristics of HfO<sub>2</sub> and SiO<sub>2</sub> Incorporated in MOS Capacitor in field of Gamma and X Radiation**  
S. Stanković<sup>1</sup>, D. Nikolić<sup>1</sup>, N. Kržanović<sup>1</sup>, L. Nadjdjerdj<sup>1</sup>, V. Davidović<sup>2</sup>  
<sup>1</sup>University of Belgrade, Serbia  
<sup>2</sup>University of Niš, Serbia
- A19 **Reduced Low Dose Rate Sensitivity (RLDRS) in Bipolar Devices**  
V. Pershenkov, A. Bakerenkov, A. Rodin, V. Felitsyn, V. Telets, V. Belyakov  
MEPhI, Moscow, Russia
- A20 **Blocking of Impacts of Single Ionizing Particles by CMOS C-element in Two-Phase Systems**  
V. Ya. Stenin<sup>1</sup>, Yu. V. Katunin<sup>2</sup>, K. A. Petrov<sup>2</sup>  
<sup>1</sup>Russian Academy of Sciences, Moscow, Russia  
<sup>2</sup>MEPhI, Moscow, Russia
- A21 **Nonparametric Statistical Analysis of Radiation Hardness Threshold Variation in CMOS IC Wafer Lots Series with the Aim of Process Monitoring**  
Yu. I. Bogdanov<sup>1,2</sup>, N. A. Bogdanova<sup>2</sup>, D. V. Fastovets<sup>2</sup>, Y. M. Moskovskaya<sup>1</sup>, A. V. Sogojan<sup>2</sup>, A. Y. Nikiforov<sup>2</sup>  
<sup>1</sup>MEPhI, Moscow, Russia  
<sup>2</sup>Russian Academy of Sciences and National Research University of Electronic Technology (MIET), Russia, Moscow
- A22 **Radiation Hardness Evaluation of LEDs based on InGaN, GaN and AlInGaP Heterostructures**  
D. S. Ukolov, N. A. Chirkov, R. K. Mozhaev, A. A. Pechenkin  
MEPhI, Moscow, Russia
- A23 **Simulation of Errors Impulses from Single Ionizing Particles in CMOS Triple Majority Gates**  
Yu. V. Katunin<sup>1</sup>, V. Ya. Stenin<sup>2</sup>, A. G. Prozorova<sup>1</sup>  
<sup>1</sup>Russian Academy of Sciences, Moscow, Russia  
<sup>2</sup>MEPhI, Moscow, Russia
- A24 **Influence of Temperature over Impedance of Different Inkjet Printed Patterns and Substrates**  
B. Nikolova, G. Nikolov, E. Gieva, I. Ruskova, M. Mladenov  
Technical University of Sofia, Bulgaria
- A25 **Virtual System for Measurement of Inkjet Printed Resistive and Capacitive Structures**  
G. Nikolov, E. Gieva, B. Nikolova, I. Ruskova  
Technical University of Sofia, Bulgaria
- A26 **Investigation on Body Potential in Cylindrical Gate-All- Around MOSFET**  
M. Kessi, A. Benfdila, A. Lakhelef, L. Belhimer, M. Djouder  
University M. Mammeri, Tizi-Ouzou, Algeria
- 18:00 **Departure for Gala Dinner**  
Faculty of Electronic Engineering

## Gala Dinner

# Wednesday, September 18<sup>th</sup>

FACULTY OF ELECTRONIC ENGINEERING, Aleksandra Medvedeva 14, Niš

**SESSION: CIRCUIT AND SYSTEM DESIGN AND TESTING 1**

**Room A**

Chairmen: Z. Stamenković, IHP, Frankfurt (Oder), Germany  
V. Liberali, University of Milan, Italy

9:00 **SAR ADC Architecture with Fully Passive Noise Shaping**

D. Osipov<sup>1</sup>, A. Gusev<sup>1</sup>, V. Shumikhin<sup>2</sup>, St. Paul<sup>1</sup>

<sup>1</sup>University of Bremen, Germany

<sup>2</sup>MEPhI, Moscow, Russia

9:15 **Improving Magnitude Response of Comb Two-Stage Structure Using Simple Multiplierless Filters**

G. Jovanovic Doleček

Institute INAOE, Puebla, Mexico

9:30 **Hardware Implementation of Selected Statistical Quantities for Applications in Automotive V2I Communication System**

M. Banach<sup>1,2</sup>, R. Długosz<sup>1,3</sup>, T. Talaška<sup>1,3</sup>

<sup>1</sup>Aptiv Services, Kraków, Poland

<sup>2</sup>Poznań University of Technology, Poland

<sup>3</sup>UTP University of Science and Technology, Bydgoszcz, Poland

9:45 **Absorptive Filters in the Realization of RCIED Activation Jamming**

A. Lebl, M. Mileusnić, B. Pavić, J. Radivojević

Institute IRITEL, Belgrade, Serbia

10:00 **Multi-Rate Signal Processing with the Use of Filter Banks Composed of Parallel FIR Filters**

M. Banach<sup>1,2</sup>, R. Długosz<sup>1,3</sup>

<sup>1</sup>Aptiv Services, Kraków, Poland

<sup>2</sup>Poznań University of Technology, Poland

<sup>3</sup>UTP University of Science and Technology, Bydgoszcz, Poland

10:15 **Algorithm for Restructuring of Structurally Synthesized BDDs**

L. Jürimägi, R. Ubar

Tallinn University of Technology, Estonia

10:30 **Coffee Break**

**SESSION: CIRCUIT AND SYSTEM DESIGN AND TESTING 2****Room A**

Chairmen: R. Długosz, UTP University of Science and Technology,  
Bydgoszcz, Poland  
Z. Prijić, University of Niš, Serbia

- 11:00 **Design of Non-Metastable SRAM Cells in 28 nm CMOS Technology**  
F. Crescioli<sup>1</sup>, L. Frontini<sup>2</sup>, V. Liberali<sup>3</sup>, A. Stabile<sup>3</sup>  
<sup>1</sup>LPHNE, Paris, France  
<sup>2</sup>INFN, Milan, Italy  
<sup>3</sup>University of Milan, Italy
- 11:15 **A Highly Parametrizable Chisel HCL Generator of Single-Path Delay Feedback FFT Processors**  
V. M. Milovanović<sup>1</sup>, M. L. Petrović<sup>2</sup>  
<sup>1</sup>University of Kragujevac, Serbia  
<sup>2</sup>NovellC Microsystems, Belgrade, Serbia
- 11:30 **Experimental Estimation of Input Offset Voltage Radiation Degradation Rate in Bipolar Operational Amplifiers**  
A. Bakerenkov, V. Pershenkov, V. Felitsyn, A. Rodin, V. Telets, V. Belyakov,  
A. Zhukov, N. Gluhov  
MEPhI, Moscow, Russia
- 11:45 **Linear Slot Array Centrally Fed by CPW T-junction for 5G Applications**  
M. Milijić<sup>1</sup>, B. Jakanović<sup>2</sup>  
<sup>1</sup>University of Niš, Serbia  
<sup>2</sup>University of Belgrade, Serbia
- 12:00 **Advanced Electro-Optical Analysis of Photoplethysmogram Signal**  
L. Evdochim, D. Dobrescu, L. Dobrescu  
University Politehnica of Bucharest, Romania
- 12:15 **Lunch** **Restaurant**

**SESSION: CIRCUIT AND SYSTEM DESIGN AND TESTING**

Lobby

Chairmen: A. Y. Nikiforov, MEPhI, Moscow, Russia  
V. Milovanović, University of Kragujevac, Serbia

- B1 **VHDL-AMS Model Development for Digitally Programmable Monolithic Instrumentation Amplifiers**  
I. Pandiev  
Technical University of Sofia, Bulgaria
- B2 **Verification of VHDL-AMS Simulation Model for Digitally Programmable Monolithic Instrumentation Amplifiers**  
I. Pandiev  
Technical University of Sofia, Bulgaria
- B3 **Multi-Phase Ring-Coupled Oscillator for TDC Using a Differential Inverter with an Oscillation Frequency Booster Circuit**  
T. Shima<sup>1</sup>, S. Kozuki<sup>2</sup>, T. Otsuka<sup>3</sup>, N. Retdian<sup>4</sup>  
<sup>1</sup>Kanagawa University, Yokohama, Japan  
<sup>2</sup>Nidec Elesys Corporation, Yokohama, Japan  
<sup>3</sup>Keio University, Japan  
<sup>4</sup>Shibaura Institute of Technology, Saitama City, Japan
- B4 **A Programmable Current-Mode Digital-to-Analog Converter with Correction of Nonlinearity of Input-Output Characteristics**  
J. Dalecki<sup>1</sup>, R. Długosz<sup>1</sup>, T. Talaśka<sup>1</sup>, G. Fischer<sup>2</sup>  
<sup>1</sup>UTP University of Science and Technology, Bydgoszcz, Poland  
<sup>2</sup>IHP, Frankfurt (Oder), Germany
- B5 **A Parallel Adaptive LMS FIR Filter Realized in CMOS Technology**  
R. Długosz<sup>1,2</sup>, T. Talaśka<sup>1,2</sup>, T. Nikolić<sup>3</sup>, G. Nikolić<sup>3</sup>  
<sup>1</sup>UTP University of Science and Technology, Bydgoszcz, Poland  
<sup>2</sup>Aptiv Services, Kraków, Poland  
<sup>3</sup>University of Niš, Serbia
- B6 **Performance Evaluation of Block-Based Adaptive Algorithms**  
T. Nikolic<sup>1</sup>, T. Talaśka<sup>2,3</sup>, G. Nikolic<sup>1</sup>, R. Długosz<sup>2,3</sup>  
<sup>1</sup>University of Niš, Serbia  
<sup>2</sup>UTP University of Science and Technology, Bydgoszcz, Poland  
<sup>3</sup>Aptiv Services, Kraków, Poland
- B7 **Comparative Analysis of Layout-Aware Fault Injection on TMR-based DMA Controllers**  
P. Chernyakov, A. Skorobogatov, A. Zvyagin, E. Emin, I. Danilov, A. Balbekov, A. Shnaider Khazanova, M. Gorbunov  
Russian Academy of Sciences, Moscow, Russia
- B8 **Approximate Adder with Reduced Error**  
P. Balasubramanian<sup>1</sup>, D. L. Maskell<sup>1</sup>, K. Prasad<sup>2</sup>  
<sup>1</sup>Nanyang Technological University, Singapore  
<sup>2</sup>Auckland University of Technology, New Zealand

- B9 **Simulation of Ternary CMOS Schemes for Many-Valued Logic Systems**  
A. A. Krasnyuk<sup>1</sup>, A. G. Prozorova<sup>2</sup>  
<sup>1</sup>MEPhI, Moscow, Russia  
<sup>2</sup>Russian Academy of Sciences, Moscow, Russia
- B10 **Optimization of Hsiao Decoders by Circuit-Level Minimization**  
K. Petrov, I. Danilov, A. Shnaider Khazanova, M. Gorbunov  
Russian Academy of Sciences, Moscow, Russia
- B11 **Differential Input Area Efficient Current Comparator**  
A. R. Serazetdinov, E. V. Atkin  
MEPhI, Moscow, Russia
- B12 **Estimation of Errors of Integrated Hydrogen Sensors Based on MISFET with Structure Pd-Ta<sub>2</sub>O<sub>5</sub>-SiO<sub>2</sub>-Si**  
B. Podlepetsky<sup>1</sup>, A. Kovalenko<sup>2</sup>  
<sup>1</sup>MEPhI, Moscow, Russia  
<sup>2</sup>Induko Ltd., Moscow, Russia
- B13 **Analysis and Design of Power Processing Circuits for Thin Film Piezoelectric Energy Harvesters on Flexible Polyethylene Terephthalate Substrates**  
I. Pandiev, M. Aleksandrova, G. Kolev  
Technical University of Sofia, Bulgaria
- B14 **Towards Portable Thermal Vacuum Sensor - Consideration of Electrical Building Blocks and Compact Housing**  
D. V. Randjelović, P. Poljak, M. Sarajlić, M. Vorkapić, M. Frantlović, D. Tanasković, B. Popović  
University of Belgrade, Serbia
- B15 **Electrical Characterization of Microbial Fuel Cells – Method and Preliminary Results**  
D. V. Randjelović, O.M. Jakšić, B. Popović, K. Joksimović, S. Miletić, P. Poljak, V. Beškoski  
University of Belgrade, Serbia
- B16 **Simulation Results of 2.45 GHz Coaxial Antenna with a Ring Slot for Microwave Ablation of a Cancer**  
K. Cocic, A. Davidovic, D. L. Sekulic  
University of Novi Sad, Serbia
- B17 **Dual Mode Ion Mobility Spectrometer High Voltage Formation Circuit**  
E. Gromov, M. Matusko, Y. Shaltaeva, V. Pershenkov, V. Belyakov, A. Golovin, E. Malkin, I. Ivanov, V. Vasilyev  
MEPhI, Moscow, Russia
- B18 **Fast Switching of the Polarity of Dual Mode Ion Mobility Spectrometer**  
V. Pershenkov, V. Belyakov, Y. Shaltaeva, E. Malkin, A. Golovin, I. Ivanov, V. Vasilyev, M. Matusko, E. Gromov  
MEPhI, Moscow, Russia

- B19 **Microcontroller's Sensitivity to Voltage Pulse Series in Comparison with a Single Voltage Pulse**  
A. N. Shemonaev, K. A. Epifantsev, P. K. Skorobogatov, A. Y. Nikiforov  
MEPhI, Moscow, Russia
- B20 **Correlation between Temperature and Dose Rate Dependences of Input Bias Current Degradation in Bipolar Operational Amplifiers**  
A. Bakerenkov, V. Pershenkov, V. Felitsyn, A. Rodin, V. Telets, V. Belyakov, A. Zhukov, N. Gluhov  
MEPhI, Moscow, Russia
- B21 **Software and Hardware System for Charge Coupled Devices with Interline Transfer of Charge Parameters Monitoring During Radiation Tests**  
V. P. Lukashin, M. E. Cherniak, A. O. Akhmetov, A. Y. Nikiforov, A. V. Ulanova  
MEPhI, Moscow, Russia
- B22 **Comparative Assessment of Digital and UHF Optoelectronic Transceivers Radiation Hardness**  
R. K. Mozhaev, M. E. Cherniak, A. A. Pechenkin, A. V. Ulanova, A. Y. Nikiforov  
MEPhI, Moscow, Russia
- B23 **Analysis of a Bridgeless Single Stage PFC Based on LLC Resonant Converter for Regulating Output Voltage**  
S. Esmailirad<sup>1</sup>, R. Beiranvand<sup>1</sup>, S. Salehirad<sup>1</sup>, S. Esmailirad<sup>2</sup>  
<sup>1</sup>Tarbiat Modares University, Jalal al Ahmad st, Tehran, Iran  
<sup>2</sup>Shahrekor University, Iran

15:00–15:30 **Conference Closing**  
**Best Paper Awards**

# 31<sup>st</sup> INTERNATIONAL CONFERENCE ON MICROELECTRONICS

## PROGRAMME

**MONDAY, September 16<sup>th</sup>**  
**UNIVERSITY OF NIŠ**  
 Univerzitetski trg 2, Niš

12:00 Registration

13:45 MINI-COLLOQUIUM  
 ON NANO- AND  
 FLEXIBLE-ELECTRONICS

18:00 Conference Opening

18:30 Welcome Cocktail

**TUESDAY, September 17<sup>th</sup>**  
**FACULTY OF ELECTRONIC ENGINEERING**  
 Aleksandra Medvedeva 14, Niš

8:30 Room A

Session:  
 DEVICE PHYSICS, TECHNOLOGY  
 AND CHARACTERIZATION 1

10:15 Coffee Break

10:30 Room A

TUTORIAL ON  
 POWER DEVICES  
 AND MODULES

11:15

Coffee Break

11:30 Room A

Session:  
 DEVICE PHYSICS, TECHNOLOGY  
 AND CHARACTERIZATION 2

13:15 Restaurant

Lunch

14:30 Room A

PLENARY SESSION

16:00

Coffee Break

16:30 Lobby

Poster Session 1:  
 DEVICE PHYSICS, TECHNOLOGY  
 AND CHARACTERIZATION

17:30

18:00

Departure for Gala Dinner

**WEDNESDAY, September 18<sup>th</sup>**  
**FACULTY OF ELECTRONIC ENGINEERING**  
 Aleksandra Medvedeva 14, Niš

9:00 Room A

Session:  
 CIRCUIT AND SYSTEM  
 DESIGN AND TESTING 1

10:30

Coffee Break

11:00 Room A

Session:  
 CIRCUIT AND SYSTEM  
 DESIGN AND TESTING 2

12:15 Restaurant

Lunch

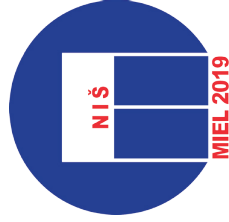
13:30 Lobby

Poster Session 2:  
 CIRCUIT AND SYSTEM  
 DESIGN AND TESTING

14:30

15:00 Lobby

Conference Closing  
 Best Paper Awards



# IMPORTANT ADDRESS

**Prof. Dr. Ninoslav Stojadinović**  
Conference Chairman

Faculty of Electronic Engineering  
University of Niš  
Aleksandra Medvedeva 14  
18000 Niš, Serbia  
Tel: +381 18 529 326  
Fax: +381 18 588 399  
E-Mail: [miel@elfak.ni.ac.rs](mailto:miel@elfak.ni.ac.rs)  
<http://miel.elfak.ni.ac.rs/>

Serbian Academy of Sciences and Arts – Branch in Niš  
Univeritetski trg 2  
18000 Niš, Serbia  
Tel: +381 18 257 997  
Fax: +381 18 257 950  
<https://www.sanu.ac.rs/en/>

