PRELIMINARY PROGRAMME

32ND INTERNATIONAL CONFERENCE ON MICROELECTRONICS

Niš, Serbia

September 12th – 14th, 2021

Organized by

Faculty of Electronic Engineering, University of Nis

IEEE Serbia and Montenegro Section - ED/SSC Chapter

in cooperation with

Serbian Academy of Sciences and Arts - Branch in Nis

under the co-sponsorship of

IEEE Electron Devices Society

under the auspices of

Serbian Ministry of Education, Science and Technological Development

Society for ETRAN

SESSION

Starts on September 12th at 10 AM

MINI-COLLOQUIUM (MQ)

INV005 **Past and future of micro-/nano-electronics**
H. Iwai

INV006 **On the CMOS Device Downsizing, More Moore, More than Moore, and More-than-Moore for More Moore**
H. Wong

INV009 **Silicon Based Quantum Computers**
S. Oda

INV010 **Multi-Dimensional Integrated Circuit (MD-IC): Enhancing Functionality In Multi-Faceted Way For Standalone Internet of Things (IoT) Devices**
M. M. Hussain

INV011 **Physical and Technological Limitations of NanoCMOS Devices to the End of the Roadmap and Beyond**
S. Deleonibus

INV012 **Oxide Thin Film Transistors and Device Circuit Interactions**
A. Nathan

Starts on September 12th at 1 PM

PLENARY SESSION - INVITED PAPERS

INV003 **Nearly Free Sustainable Electric Power for All: Electrify Almost Everything**
R. Singh and P. Paniyil

INV002 **Graphene-based chemiresistive gas sensors**
M. Spasenović, S. Andrić, and T. Tomašević-Ilić

INV007 **Gas Sensing with Two-Dimensional Materials Beyond Graphene**
L. Filipovic and S. Selberherr

INV004 **Smart Sub-Microelectronics Radiation Behavior Trends and Test Facilities Evolution**
A. Y. Nikiforov, M. S. Gorbunov, A. A. Smolin, G. G. Davydov, and D. V. Boychenko

INV001 **Cross-Layer Digital Design Flow for Space Applications**
M. Krstić, M. Andjelković, O. Schrape, A. Breitenreiter, J. Chen, A. Balashov, and A. Simevski

INV008 **A Review of the Electric Circuits for NBTI Modeling in P-Channel Power VDMOSFETs**
D. Danković, N. Mitrović, S. Veljković, V. Davidović, S. Djorić-Veljković, Z. Prijić, A. Paskaleva, D. Spassov, and S. Golubović

INV013 **Radiation Sensing Field Effect Transistor (RADFET) - Development Process From a Personal Perspective**
A. Jaksic, N. Vasovic, and R. Duane

INV014 **Metal Oxide Thin Film Devices for Electronic and Optoelectronic Applications**
S. Jit

INV015 **Ultra-Low-Power Integrated and Wireless Systems in the IoT Era**
D. Manic

SESSION

DEVICE PHYSICS AND CHARACTERIZATION

REG018 **Self-heating Effects Measured in Fully Packaged FinFET Devices**
E. Bender and J. B. Bernstein

REG003 **Experimental-Simulation Matching Parameters for Pentacene Organic Thin Film Transistor**
C. Ravariu, A-L. Drosu, R-M. Vasile, and A. Srinivasulu

REG052 **One-way Sensitivity Analysis of the Quasi-static Memdiode Model for RRAM Devices**
E. Salvador, M.B. Gonzalez, F. Campabadal, J. Martín-Martínez, R. Rodríguez, and E. Miranda

REG028 **Plasmonic crystals with conical perforations as multipurpose optical elements**
M. Obradov, Z. Jakšić, I. Mladenović, D. Tanasković, and D. Vasiljević Radović

REG001 **Numerical Simulations of Trapping Efficiency in One- dimensional Lattice with a Coupling Defect as a Function of Lattice**
M. Stojanović-Krasić, S. Jovanović, and S. Djorić-Veljković

REG013 **Magnetoplasma Terahertz Solitons and Collapsing Pulses in Narrow-Gap Semiconductors**
V. Grimalsky, S. Koshevaya, Yu. Rapoport, and J. Escobedo-Alatorre

REG012 **Resonant Generation of Higher Harmonics of Terahertz Pulses in the Layered Structures Dielectric – Graphene**
V. Grimalsky, S. Koshevaya, J. Escobedo-Alatorre, and M. Tecpoyotl-Torres

REG045 **COMSOL Model of a Three-Gate Junctionless Transistor**
R. Rusev, G. Angelov, I. Ruskova, E. Gieva, D. Nikolov, M. Spasova, M. Hristov, and R. Radonov

REG020 **An Accurate Analytical Modeling of Contact Re-sistances in MOSFETs**
G. D. Bokitko, D. S. Malich, V. O. Turin, and G. I. Zebrev

REG067 **Optoelectronic Modeling of Graded-Bandgap Thin-Film Solar Cells**
F. Ahmad, A. Lakhtakia, P. B. Monk, and B. J. Civiletti

REG068 **A SPICE compatible spatial equivalent circuit model of the heatsink**
M. Marjanović, A. Stojković, A. Prijić, D. Danković, and Z. Prijić

REG051 **Sensitivity Analysis of Possible THz Virus Detection Using Quad-Band Metamaterial Sensor**
A. Kovačević, M. Potrebić, and D. Tošić

REG008 **Statistical Analysis of Breakdown Voltage of CITEL Gas-filled Surge Arrester**
M. Živković, N. Dimitrijević, and E. Živanović

REG066 **Electronic Components Authentication Methods Based on Visual and Chemical Package Analysis**
A. O. Shirin, L. N. Kessarinskiy, K. A. Koval, F. F. Taiibov, A. S. Kameneva, and A. P. Durakovskiy

REG065 **X-ray Based Electronic Components Authentication Methods to Counterfeit Detection**
E. A. Simakhin, A. O. Shirin, L. N. Kessarinskiy, K. A. Koval, F. F. Taiibov, A. S. Artamonov, and A. P. Durakovskiy

REG063 **Precision Masa Control Based Authentication Methods of Electronic Components to Counterfeit Detection**
L. N. Kessarinskiy, A. O. Shirin, K. A. Koval, F. F. Taiibov, A. S. Kameneva, and D. V. Boychenko

REG064 **Electronic Components Authentication Methods Based on Decapsulation and Chip Photo Analysis**
I. B. Leukhin, A. O. Shirin, L. N. Kessarinskiy, F. F. Taiibov, A. S. Kameneva, and A. P. Durakovskiy

REG072 **Analysis of Fake Amplifiers**
G. Mura, R. Murru, and G. Martines

REG076 **Application of Confocal Microscopy Methods for Research and Non-destructive Examination of Semiconductor Structures and Integrated Circuits**
A. A. Baluev, D. S. Ukolov, A. A. Pechenkin, and R. K. Mozhaev

REG078 **SiC Schottky Diodes for Reduced Size and Improved Efficiency of Energy-Conversion Systems**
S. Dimitrijev

SESSION DEVICE TECHNOLOGY AND CHARACTERIZATION

REG007 **Hot Carrier Degradation in Triple-RESURF LDMOS with Trenched-Gate**
A. Houadef and B. Djezzar

REG016 **Passivation Properties of Atomic-Layer-Deposited Hafnium Oxide on Black Silicon Surface**
G.Y. Ayvazyan, A.V. Aghabekyan, L.A. Hakhoyan, M.V. Katkov, and M.S. Lebedev

REG033 **Optimization of HfO_2/Al_2O_3 dielectric stacks for charge trapping memories**
D. Spassov and A. Paskaleva

REG071 **Reduction of Interface States Stress Generation by Oxygen Annealing of ALD Nanolaminated HfO_2/Al_2O_3 Dielectric Stacks for Charge Trapping Devices**
A. Skeparovski, N. Novkovski, A. Paskaleva, and D. Spassov

REG042 **The Effect of Aliovalent Cations (Nb^{5+} and La^{3+}) on the Electrical Characteristics of $BaTiO_3$ Based Ceramics**
V. Paunović, Z. Prijić, and V. Mitić

REG043 **Influence of silver content in glassy matrix on resistive switching behavior**
K. O. Čajko, D. L. Sekulić, and S. R. Lukić-Petrović

REG002 **Structural, electrical and mechanical behavior of thin copper coatings obtained by various electrodeposition processes**
I. Mladenović, M. Bošković, J. Lamovec, M. Vuksanović, N. D. Nikolić, V. Radojević, and D. Vasiljević-Radović

REG046 **Process Considerations For Screen-Printed Thick-Film MEMS**
Z. Stanimirović and I. Stanimirović

REG047 **Effects of High Temperature Treatment on Noise Properties of Thick Resistive Films**
I. Stanimirović and Z. Stanimirović

REG070 **Examples of Wide Microwave Bandpass Microstrip Filters on Felt Substrate**
D. Nešić

REG029 **Design and Analysis of RF-MEMS Switches with Meandered Beams for Reduced Actuation Voltage**
G. Tagliapietra and J. Iannacci

REG014 **Calibration of MEMS sensors for precision measurment of acceleration, spin and attitude**
A. W. Lodhi, and M. H. Shahab

REG010 **Sputtered Nanostructured Interfaces Used for Biochemical Sensing**
V. Tvarožek and O. Szabó

REG031 **A Simple Concave Corner Compensation of Etched Si(100) in 25% wt TMAH water solution**
M. M. Smiljanić, Ž. Lazić, E. Milinković, K. Cvetanović, and M. Rašljić Rafajilović

REG034 **Improving Sidewall Flatness of Through Silicon Via by Thermal Oxidation**
W. Shuo, R. Jingyang, Y. Lai, Y. Fashun, and M. Kui

REG060 **Fractal reconstruction of fiber-reinforced epoxy microstructure**
I. M. Radović, A. Stajčić, V. V. Mitić, C. Serpa, V. Paunović, and B. Ranđelović

SESSION CIRCUIT AND SYSTEM DESIGN AND TESTING

REG019 **By Design Correction of Capacitors Mismatch in SAR ADC with Split Capacitor DAC**
D. Osipov, A. Gusev, and S. Paul

REG044 **Open Source CMOS General Purpose Operational Amplifier**
A. Pajkanovic

REG023 **Low Noise High Linearity Current Readout Topologies for Potentiostat Circuitry**
S. Toprak, R. Acar Vural, and O. Zafer Batur

REG026 **I/Q Demodulator for a Doppler System**
A. Marzuki and I. A. Ukaegbu

REG025 **A New Optimization and Statistical Analysis for Widlar Current Source using Predictive MOSFET models**
L.A. Gheorghe, D. Dobrescu, I. Busu, and L. Dobrescu

REG050 **Measurement circuits' characteristics of MISFET-based sensors**
B. Podlepetsky, A. Kovalenko, and N. Samotaev

REG037 **A MOS Temperature-Insensitive Voltage Divider and Its Application for Voltage Reference Design**
I. A. Danilov, M. S. Gorbunov, and A. Y. Nikiforov

REG035 **SiGe BiCMOS Voltage-Controlled Oscillator and Mixer IP-blocks for the Next-Generation Communication Transceivers**
I. A. Selishchev, D. I. Sotskov, A. G. Kuznetsov, N. A. Usachev, V. V. Elesin, V. N. Kotov, and A. O. Balbekov

REG004 **Low power pre-charge voltage level and low swing logic based 8T SRAM cell for high speed CMOS circuits**
R. M. Rawat and V. Kumar

REG054 **RNS elements of fast multiplication for finite Galois field arithmetic**
A. A. Krasnyuk and A. G. Prozorova

REG048 **A Chisel Generator of Parameterizable and Runtime Reconfigurable Linear Insertion Streaming Sorters**
M. L. Petrović and V. M. Milovanović

REG009 **Design of Comb Decimation Filter with Improved Aliasing Rejection and Compensated Passband**
G. Jovanovic Dolecek

REG032 **Model for Determining the Optimal Structure of Hierarchical Asymmetric Branched Computer Networks**
V. Teslyuk, O. Pavliuk, and I. Kazymyra

REG022 **FPGA Implementation of Computer Network Security Protection with Machine Learning**
Z. Todorov, D. Efnusheva, and T. Nikolić

REG074 **Advanced Training Set Generator for Use in Self-Organizing Neural Networks**
N. Pasturczak and R. Długosz

REG073 **The Use of Artificial Neural Networks in Predicting Air Pollution in Cities – Hardware Implementation Issues**
M. Banach, Z. Długosz, R. Długosz, and T. Talaśka

REG027 **Fault Resilience Analysis of Quantized Deep Neural Networks**
R. T. Syed, M. Ulbricht, K. Piotrowski, and M. Krstić

REG075 **Extraction of the Resonant Parameters for Surface Acoustic Wave Resonators: ANNs versus Lorentzian Fitting Method**
Z. Marinković, G. Gugliandolo, G. Campobello, G. Crupi, and N. Donato

REG062 **AI assisted optimization of unimorph tapered cantilever for Piezoelectric Energy Harvesting**
O. Pertin, K. Guha, O. Jakšić, and Z. Jakšić

REG040 **Providing The Low Temperature of The Heat-Generating Power Devices during The Long-Term Experiment**
M. V. Muzafarov, A. S. Kolosova, A. A. Pechenkin, G. G. Davydov, P. S. Gromova, and D. V. Boychenko

REG061 **Simulation of the Earth's Magnetic Field Distortion Induced by a Vehicle**
M. Stojanović, J. Vračar, I. N. Dimitriu, and Lj. Vračar

REG024 **IoT for COVID-19 Indoor Spread Prevention: Cough Detection, Air Quality Control and Contact Tracing**
N. Petrović and Đ. Kocić

REG069 **Electrons in biomolecule and condensed matter systems Brownian motion**
S. Aleksić, B. Marković, V. V. Mitić, D. Milošević, M. Milošević, V. Paunović, I. Ilić, D. Pantić, M. Soković, and B. Vlahović

REG021 **Image Blending using Approximate Multiplication**
P. Balasubramanian, R. Nayar, O. Min, and D. L. Maskell

REG017 **The WEAF Mnecosystem – A Vision of Micro/Nanotechnologies to Empower the 6G and Super-IoT Future Paradigms**
J. Iannacci

SESSION DEVICES AND SYSTEMS IN RADIATION ENVIRONMENT

REG057 **Application of Transimpedance Amplifiers in PIN Photodiode Dosimetry**
L. Spahić, S. Ilić, M. Anđelković, A. J. Palma, and G. S. Ristić

REG005 **Masking of SET in a CMOS Triple Majority Gate on logic NAND under impacts of Single Ionizing Particles**
Yu. V. Katunin and V. Ya. Stenin

REG006 **The Majority Gate as a Source of Error Pulses in Redundancy Systems when Collecting Charge from the Tracks of Single Particles**
Yu. V. Katunin and V. Ya. Stenin

REG030 **Standard Delay Cells with Improved Tolerance to Single Event Transients**
M. Andjelković, C. Calligaro, O. Schrape, U. Gatti, F. A. Kuentzer, and M. Krstić

REG056 **Single Event Transients Generation and Propagation Flow using Commercial EDA Tools**
S. Simoglou, C. Georgakidis, I. Lilitsis, C. Sotiriou, M. Andjelković, and M. Krstić

REG053 **Power Silicon Carbide Schottky Diodes as Current Mode γ-Radiation Detectors**
S. D. Ilić, M. S. Andjelković, M. A. Carvajal, A. M. Lallena, M. Krstić, S. Stanković, and G. S. Ristić

REG059 **Sensitivity of Unbiased Commercial P-channel Power VDMOSFETs to X-ray Radiation**
G. S. Ristić, A. S. Jevtić, S. D. Ilić, S. Dimitijević, S. Veljković, A. J. Palma, S. Stanković, and M. S. Andjelković

REG077 **Effects of Bias Temperature Stress and Irradiation in Commercial p-Channel Power VDMOS Transistors**
S. Veljković, N. Mitrović, S. Djorić-Veljković, V. Davidović, I. Manić, S. Golubović, A. Paskaleva, D. Spassov, Z. Prijić, A. Prijić, S. Stanković, and D. Danković

REG011 **Application of MISFETs for Irradiation Dose Rate Measurement**
B. Podlepetsky, V. Pershenkov, A. Bakerenkov, and V. Felitsyn

REG039 **Evaluation of Organic Light-Emitting Diodes Total Ionizing Dose Sensitivity in Temperature Range**
R. K. Mozhaev, A. A. Pechenkin, D. S. Ukolov, A. V. Ulanova, and A. Yu. Nikiforov

REG049 **Testing for Enhanced Low Dose Rate Sensitivity and Reduced Low Dose Rate Sensitivity Bipolar Devices**
V. S. Pershenkov, V. A. Felitsyn, A. S. Bakerenkov, A. S. Rodin, V. A. Telets, V. V. Belyakov, I. D. Kovsharov, and A. I. Zhukov

REG036 **Total Ionizing Dose Sensitivity of 180 nm Silicon-on-Insulator Microwave Low-Noise Amplifer**
M S. Gorbunov, N M. Zhidkov, D. I. Sotskov, A. G. Kuznetsov, V. N. Kotov, V. V. Elesin, and I. A. Selishchev

REG058 **Technique for numerical simulation of post-irradiation annealing including temperature drift of electrical parameters of devices under test**
A. S. Bakerenkov, A. S. Rodin, V. A. Felitsyn, V. S. Pershenkov, and A. I. Zhukov

REG041 **TID Impact on SEL Sensitivity in The Case of High Latchup Holding Voltage**
A. A. Novikov, I. I. Shvetsov-Shilovskiy, E. N. Oblova, A. A. Pechenkin, and A. I. Chumakov

REG038 **The Effects of the External Conditions of CMOS IC Functioning on Latchup Occurrence under Uniform Laser Irradiation**
I. I. Shvetsov-Shilovskiy, A. I. Chumakov, A. A. Pechenkin, and D. V. Bobrovskiy

REG055 **A CMOS 10-Bit 3MS/s Rad-Hard DAC Based on Resistor String Poly-Matrix**
C. Calligaro and U. Gatti