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44th International Semiconductor Conference CAS 2021

October 6 – 8, 2021

Technical Program

organized by



National Institute for research and Development in
Microtechnologies – IMT Bucharest

sponsored by



Ministry of Research,
Innovation and
Digitalization



Program overview

All session times are Eastern European Summer Time (EET) GMT +03:00

Wednesday, October 6, 2021		
09:00 – 09:10	Welcome to CAS 2021	
09:10 – 10:10	INVITED PAPERS	
10:10 – 11:30	NANOSCIENCE AND NANOENGINEERING 1 (Lectures)	
11:30 – 11:50	Break	
11:50 – 13:10	MICROWAVE AND MILLIMETER WAVE CIRCUITS AND SYSTEMS (Lectures)	
13:10 – 14:00	Break	
14:00 – 14:20	ASCENT+ European Infrastructure for Nanoelectronics	
14:20 – 16:00	MICROSENSORS & MODELLING – Student Papers (Lectures)	
16:00 – 16:10	Break	
16:10 – 17:30	MODELLING (Lectures)	MICROSENSORS AND DEVICES – Posters
17:30 – 17:50		
Thursday, October 7, 2021		
10:00 – 11:40	SEMICONDUCTOR DEVICES 2 – Student Papers (Lectures)	
11:40 – 12:00	Break	
12:00 – 13:40	SENSORS AND MICRO-OPTICS (Lectures)	WORKSHOP “Harvesting of energy with nanomaterials” organized by NANO-EH - H2020-EIC-FETPROACT project
13:40 – 14:30	Break	
14:30 – 15:50	SEMICONDUCTOR DEVICES 1 (Lectures)	
15:50 – 16:00	Break	
16:00 – 17:40	INTEGRATED CIRCUITS – Student Papers 1 (Lectures)	NANOSCIENCE AND NANOENGINEERING 4 - Posters
Friday, October 8, 2021		
09:00 – 10:40	NANOSCIENCE AND NANOENGINEERING 3 – Student Papers (Lectures)	
10:40 – 11:00	Break	
11:00 – 12:00	INTEGRATED CIRCUITS (Lectures)	“Micro-nanotechnologies in Horizon Europe Calls” event organized by CESMIN project
12:00 – 13:00		“Driving talented organisations to successful Horizon Europe projects” event organized by FIT-4-NMP H2020 project
13:00 – 13:40		
13:40 – 14:00	Break	
14:00 – 15:20	INTEGRATED CIRCUITS – Student Papers 2 (Lectures)	
15:20 – 16:40	NANOSCIENCE AND NANOENGINEERING 2 (Lectures)	
16:40 – 17:00	Break	
17:00	Closing remarks and virtual Awards ceremony CAS 2021	

Wednesday, October 6, 2021

09:00 – 09:10	Welcome to CAS 2021 M. Dragoman , IMT Bucharest, Romania; CAS Technical Program Committee Chair
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INVITED PAPERS (*Lectures*)

Chair: M. Dragoman, IMT Bucharest, Romania
Gh. Brezeanu, Univ. "Politehnica" of Bucharest, Romania

09:10 – 09:40	LET'S CONSIDER MOORE'S LAW IN ITS ENTIRETY Gh. Stefan , Univ. "Politehnica" of Bucharest, Romania.
09:40 – 10:10	THz SPECTROSCOPY BY NARROW SPECTRAL EMISSION OF QUANTUM CASCADE LASERS FOR MEDICAL APPLICATIONS H.L. Hartnagel ¹ , V.P. Sirkeli ² , P. Acedo ^{3,4} , ¹ Technische Univ. Darmstadt, Germany, ² Moldova State Univ., Moldova, ³ Univ. Carlos III de Madrid, ⁴ Inst. de Investigacion Sanitaria de la Fundacion Jimenez Diaz, Madrid, Spain.

NANOSCIENCE AND NANOENGINEERING 1 (*Lectures*)

Chair: M. Dragoman, IMT Bucharest, Romania

10:10 – 10:30	PHOTOLUMINESCENCE STUDY OF Si _{1-x} Ge _x NANOPARTICLES IN VARIOUS OXIDE MATRICES M.T. Sultan ¹ , J.T. Gudmundsson ^{1,2} , A. Manolescu ³ , M.L. Ciurea ^{4,5} , H.G. Svavarsson ³ , S. Ingvarsson ¹ , ¹ Univ. of Iceland, Reykjavík, Iceland, ² KTH-Royal Inst. of Technology, Sweden, ³ Reykjavik Univ., Iceland, ⁴ National Inst. of Materials Physics, ⁵ Academy of Romanian Scientists, Bucharest, Romania.
10:30 – 10:50	INNOVATIVE IDEAS IN THE DESIGN, RE-USE AND RE-FABRICATION OF RARE EARTH-BASED MATERIALS IN THE CONTEXT OF MICROELECTRONICS AND RENEWABLE ENERGY R.-R. Piticescu ¹ , M. Prakasam ² , O. Jay ³ , A.E. Slobozeanu ¹ , M. Burada ¹ , ¹ National R&D Inst. for Nonferrous and Rare Metals-IMNR, Romania, ² CNRS-ICMCB Bordeaux, France, ³ Faddtory Srl, Belgium.
10:50 – 11:10	STUDY OF MONOCHROMATIC ABERRATED METALENSES BY INTENSITY-BASED MOMENTS S. Iftimie , A.-M. Raduta , D. Dragoman , Univ. of Bucharest, Romania.
11:10 – 11:30	NANOCRYSTALLIZATION OF GeSn THIN LAYERS CONTROLLED BY SiO ₂ SPACER IN MULTILAYERS A. Slav ¹ , I. Dascalescu ¹ , A.-M. Lepadatu ¹ , C. Palade ¹ , V.S. Teodorescu ^{1,3} , M.L. Ciurea ^{1,3} , M. Braic ² , T. Stoica ¹ , ¹ National Inst. of Materials Physics, ² National Inst. for R&D in Optoelectronics, ³ Academy of Romanian Scientists, Romania.

11:30 – 11:50	Break
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MICROWAVE AND MILLIMETER WAVE CIRCUITS AND SYSTEMS (*Lectures*)

Chair: A. Müller, IMT Bucharest, Romania

A. Nicoloiu, IMT Bucharest, Romania

11:50 – 12:10	ON THE ANALYSIS OF THE RECTANGULAR DIELECTRIC WAVEGUIDE, BY USING THE GENERALIZED TELEGRAPHIST'S EQUATIONS BASED METHOD S. Simion , Electronics and Communications Dept., MTA – Bucharest, Romania.
12:10 – 12:30	RFID TAG WITH ELECTROMAGNETIC WAVE POLARIZATION DIVERSITY D. Neculoiu^{1,2}, A.-C. Bunea¹ , ¹ IMT Bucharest, ² Univ. "Politehnica" of Bucharest, Romania.
12:30 – 12:50	MODES INVESTIGATION OF PRISMATIC DIELECTRIC ELEMENTS FOR MICROWAVE ANTENNAS M.G. Banciu, D.C. Geambasu, L. Nedelcu , National Inst. of Materials Physics, Romania.
12:50 – 13:10	NUMERICAL MODELLING OF 180° HYBRID RING COUPLERS OPERATING IN THE GSM 1800 BAND V. Ionescu , "Ovidius" Univ. of Constanta, Romania.

13:10 – 14:00

Break

14:00 – 14:20

ASCENT+ EUROPEAN INFRASTRUCTURE FOR NANOELECTRONICS: DEEP DIVE TO 2D MATERIALS RESEARCH FOR DISRUPTIVE LOGIC AND MEMORY DEVICES

F. Gity, Tyndall National Inst., Cork, Ireland.

MICROSENSORS & MODELLING – Student Papers (*Lectures*)

Chair: Gh. Pristavu, Univ. "Politehnica" of Bucharest, Romania

A.M. Avram, IMT Bucharest, Romania

14:20 – 14:40	SUPERIOR INTERFACE TRAP VARIABILITY IMMUNITY OF HORIZONTALLY STACKED Si NANOSHEET FET IN SUB-3-nm TECHNOLOGY NODE A. Sudarsanan, O. Badami, K. Nayak , Indian Inst. of Technology Hyderabad, Telangana, India.
14:40 – 15:00	ANALYTICAL SURFACE POTENTIAL CALCULATION FOR ORGANIC THIN-FILM TRANSISTORS Y.H. Zarkob, S.A. Bhat, S.A. Ahsan , National Inst. of Technology, Srinagar, India.
15:00 – 15:20	AZULENE-THIADIAZOLE MODIFIED ELECTRODES FOR HEAVY METAL SENSING V. Anastasoae, C. Omocea*, L.-B. Enache*, E.-M. Ungureanu* , IMT Bucharest, *Univ. "Politehnica" of Bucharest, Romania.
15:20 – 15:40	MicroPIV ON CARBONIC MATERIALS EMBEDDED IN A MICROFLUIDIC DEVICE E. Chiriac^{1,2}, B. Adiaconiță^{1,2}, C. Pachiu¹, M. Avram¹, C. Bălan² , ¹ IMT Bucharest, ² Univ. "Politehnica" of Bucharest, Romania.
15:40 – 16:00	TACTILE FEEDBACK THROUGH VELOSTAT AND MOTION ALGORITHM FOR A NEURAL PROSTHESIS M.-I. Gheorghe¹, M. Dascalu^{1,2}, F.-C. Vasiliu¹, D. Dragomir³, E. Franti^{2,3} , ¹ Univ. "Politehnica" of Bucharest, ² ICIA, Bucharest, ³ IMT Bucharest, Bucharest, Romania.

16:00 – 16:10

Break

MODELLING (*Lectures*) (*parallel session*)

Chair: D. Neculoiu, IMT Bucharest, Romania

L. Dobrescu, Univ. "Politehnica" of Bucharest, Romania

16:10 – 16:30	MODELING THE TEMPERATURE-DEPENDENT REVERSE BREAKDOWN BEHAVIOR OF GaAs PIN DIODES P. Scharf, F.A. Velarde Gonzalez, A. Lange, M. Dietrich*, V. Dudek* , Fraunhofer Inst. for Integrated Circuits IIS/EAS, Dresden, *3-5 Power Electronics GmbH, Dresden, Germany.
16:30 – 16:50	PHYSICAL MODELING OF FERROELECTRIC TUNNEL JUNCTIONS T. Sandu, C. Tibeica, R. Plugaru, O. Nedelcu, N. Plugaru , IMT Bucharest, Romania.
16:50 – 17:10	THE MECHANISM OF FIELD-PLATE INDUCED THE BREAKDOWN VOLTAGE CHANGE OF HIGH VOLTAGE LDMOS C.-K. Shih¹, C.-C. Liao^{1,2}, K. Nidhi¹, K.-C. Kan¹, K.-H. Chen², J.-H. Lee¹ , ¹ Vanguard International Semiconductor Corp., Hsinchu, ² National Yang Ming Chiao Tung Univ., Hsinchu, Taiwan.
17:10 – 17:30	A MODEL OF THE V-T CHARACTERISTICS FOR AN OTFT TEMPERATURE SENSOR R. Liguori, L. Di Benedetto, G. D. Licciardo , Univ. of Salerno, Italy.

MICROSENSORS AND DEVICES - *Posters* (*parallel session*)

Chair: V. Avramescu, IMT Bucharest, Romania

O. Nedelcu, IMT Bucharest, Romania

16:10 – 16:20	MEASUREMENT SETUP AND PROCEDURE FOR THE ACCURATE DETERMINATION OF THE GAIN AND THE BREAKDOWN VOLTAGE FOR SILICON PHOTOMULTIPLIER (SiPM) ARRAYS F.-A. Popescu, G. Chiritoi, E.M. Popescu , Inst. of Space Science, Magurele, Romania.
16:20 – 16:30	REACHING THE THEORETICAL PERFORMANCE LIMIT OF MODIFIED GRAPHENE SPR BASED SENSORS P. Varasteanu^{1,2} , ¹ IMT Bucharest, ² Univ. of Bucharest, Romania.
16:30 – 16:40	DARK CURRENT AND NOISE IN DIFFUSED AND EPITAXIAL InAs PHOTODIODES A. Tkachuk, V. Tetyorkin*, A. Sukach* , V. Vynnychenko Central Ukrainian State Pedagogical Univ., *V.Ye. Lashkaryov Inst. of Physics of Semiconductors of NAS of Ukraine, Ukraine.
16:40 – 16:50	STACKED IMAGE SENSOR WITH AVALANCHE MULTIPLICATION IN A SURFACE-ENHANCED CRYSTALLINE SELENIUM-BASED PHOTOCONVERSION LAYER S. Imura, K. Mineo, T. Arai, K. Miyakawa, T. Watabe, M. Kubota, S. Aihara, K. Nishimoto*, M. Sugiyama*, M. Nanba , Japan Broadcasting Corporation (NHK), Tokyo, *Tokyo Univ. of Science, Chiba, Japan.
16:50 – 17:00	ELECTROCHEMICAL CHARACTERIZATION AND APPLICATION OF A GOLD MICROFABRICATED DEVICE L.A. Dinu Gugoasa, A.M. Baracu, G. Craciun , IMT Bucharest, Romania.
17:00 – 17:10	MORPHOLOGICAL AND OPTICAL PROPERTIES OF Nb OR Zn-DOPED ITO THIN FILMS DEPOSITED BY SOL-GEL METHOD M. Nicolescu, M. Anastasescu, H. Stroescu, L. Predoana, M. Zaharescu, C. Moldovan*, M. Gartner , Inst. of Physical Chemistry "Ilie Murgulescu" of the Romanian Academy, *IMT Bucharest, Romania.
17:10 – 17:20	THE EFFECT OF TEMPERATURE ON THE ELECTRICAL RESPONSE EXCITED BY ACOUSTICALLY DRIVEN BANDGAP MODULATION IN AN INDIUM ANTIMONIDE TRANSDUCER H. Salehi Najafabadi, M.A. Meier, G.A. Hallock* , Univ. of Houston, Houston, TX, *Univ. of Texas at Austin, TX, USA.

17:20 – 17:30	DOUBLE-GATE JUNCTIONLESS GNR-FETs OPERATING IN THE BTBT REGIME: A SIMPLE DESIGN WITH IMPROVED PERFORMANCE FOR LOW-POWER APPLICATIONS K. Tamersit , Dept. of Electronics and Telecommunications, Dept. of Electrical and Automatic Engineering, PIMIS Laboratory, Univ. 8 Mai 1945, Guelma, Algeria.
17:30 – 17:40	TESTING AND CHARACTERIZATION OF A BIOSENSOR FOR THE DETECTION OF INFECTIONS IN TISSUE BASED ON Rh6G AND AuNP FUNCTIONALIZED WITH BSA L. Draghiciu, C. Parvulescu, G. Craciun, C. Voitincu, A. Albu, C. Romanitan , IMT Bucharest, Romania.
17:40 – 17:50	INVESTIGATING ELECTRICAL CHARACTERISTICS OF CYLINDRICAL NANOSCALE VERTICAL VACUUM CHANNEL FIELD EMISSION TRANSISTOR WITH DIFFERENT CATHODE MATERIALS F. Kohani Khoshkbijari, M.J. Sharifi , Shahid Beheshti Univ., Tehran, Iran.

Thursday, October 7, 2021

SEMICONDUCTOR DEVICES 2 – Student Papers (Lectures)	
Chair: F. Draghici, Univ. "Politehnica" of Bucharest, Romania M. Neag, Technical Univ. of Cluj-Napoca, Romania	
10:00 – 10:20	EFFECT OF INTERFACE TRAPS ON SiC-BASED POWER D-MOSFET TRANSIENT BEHAVIOUR S. Nayak, S. Lodha, S. Ganguly , Indian Inst. of Technology Bombay Mumbai, India.
10:20 – 10:40	ESTIMATION OF CONTACT RESISTANCE IN FOUR TERMINAL AMORPHOUS IGZO THIN FILM TRANSISTOR N. Firoz, S. Singh, B. Mazhari , Indian Inst. of Technology Kanpur, India.
10:40 – 11:00	ABNORMAL DEVICE PERFORMANCE IN TRANSFERRED MULTILAYER MoS ₂ FIELD-EFFECT TRANSISTORS L. Tong, J. Ma, X. Chen, X. Guo, S. Gou, Y. Xia, D. Wang, H. Chen, W. Bao , Fudan Univ., Shanghai, P.R. China.
11:00 – 11:20	PARAMETERS OPTIMIZATION FOR PIN-TUNNEL-FETs R. Vasile¹, C. Ravariu¹, B. Appasani², A. Srinivasulu³ , ¹ Univ. "Politehnica" of Bucharest, Romania, ² Kalinga Inst. of Industrial Technology, Bhubaneswar, ³ K.R. Mangalam Univ., Haryana State, India.
11:20 – 11:40	FABRICATION OF A ITO/PEDOT:PSS/ZnPc:I ₂ /Al SCHOTTKY DIODE SOLAR CELLS USING SOLUTION TECHNIQUE I. Gadiac, V. Furtună, T. Potlog , Moldova State Univ., Chisinau, Moldova.
11:40 – 12:00	Break

SENSORS AND MICRO-OPTICS (Lectures) (parallel session)

Chairs: R. Müller, IMT Bucharest, Romania

D. Cristea, IMT Bucharest, Romania

12:00 – 12:20	DESIGN AND SYNTHESIS OF ZnO-n/NiO-p MICROSTRUCTURES FOR ROOM-TEMPERATURE FORMALDEHYDE SENSING M. Chelu, P. Chesler, M. Anastasescu, C. Hornoiu, D. Mitrea, C. Brasoveanu*, C. Moldovan*, M. Gartner , Inst. of Physical Chemistry “Ilie Murgulescu” of the Romanian Academy, *IMT Bucharest, Romania
12:20 – 12:40	COMPARISON OF PERFORMANCE OF MICROBIAL FUEL CELLS BASED ON RIVER SEDIMENT AND ACID MINE DRAINAGE SEDIMENT D. Randjelović, K. Joksimović, A. Žerađanin, B. Popović, P. Poljak, V. Beškosi* , Inst. of Chemistry, Technology and Metallurgy, Univ. of Belgrade, *Faculty of Chemistry, Univ. of Belgrade, Republic of Serbia.
12:40 – 13:00	NOVEL ScAlN/Si SAW-TYPE DEVICES TARGETING SURFACE ACOUSTIC WAVE/SPIN WAVE COUPLING A. Nicoloiu¹, C. Nastase¹, I. Zdruc¹, D. Vasilache¹, G. Boldeiu^{1,2}, M. C. Ciornei¹, A. Dinescu¹, A. Müller¹ , ¹ IMT Bucharest, ² Univ. “Politehnica” of Bucharest, Romania.
13:00 – 13:20	UV IMPRINTING PROCESSES FOR FABRICATION OF MICRO OPTICAL COMPONENTS C. Thanner, J. Peter, R. Breyer, M. Begel , EV Group, St. Florian am Inn, Austria.
13:20 – 13:40	DESIGN AND FABRICATION OF FRESNEL LENSES ARRAY M. Kusko, A. Avram , IMT Bucharest, Romania.

WORKSHOP “HARVESTING OF ENERGY WITH NANOMATERIALS”
organized by NANO-EH -H2020-EIC-FETPROACT Project (parallel session)

Chair: M. Modreanu, Univ. College Cork, Ireland

M. Aldrigo, IMT Bucharest, Romania

12:00 – 12:10	NANO-EH project “NANOMATERIALS ENABLING SMART ENERGY HARVESTING FOR NEXT-GENERATION INTERNET-OF-THINGS” M. Modreanu , Tyndall National Inst., Univ. College Cork, Ireland.
12:10 – 12:30	BOW-TIE ANTENNA INTEGRATED WITH A MOLYBDENUM DISULFIDE SELF-SWITCHING DIODE FOR 24-GHz ENERGY HARVESTING M. Aldrigo¹, V. Buiculescu¹, M. Dragoman¹, S. Iordanescu¹, M. Modreanu², L. Pierantoni³, D. Mencarelli³, A. Di Donato³ , ¹ IMT Bucharest, Romania, ² Tyndall National Inst., Univ. College Cork, Ireland, ³ Polytechnic Univ. of Marche, Ancona, Italy.
12:30 – 12:50	MULTIPHYSICS THERMAL SIMULATIONS OF NANOSCALE MATERIALS FOR PYROELECTRIC ENERGY HARVESTING APPLICATIONS G. Boldeiu, M. Aldrigo, M. Dragoman , IMT Bucharest, Romania.
12:50 – 13:10	OPTICAL CHARACTERIZATION OF LAYERED MoS ₂ AND HfZrO SYSTEMS: A COMBINED COMPUTATIONAL-EXPERIMENTAL APPROACH E. Laudadio¹, P. Stipa¹, L. Pierantoni¹, D. Mencarelli¹, A. Di Donato¹, L. Zappelli¹, P. Russo¹, M. Aldrigo², M. Dragoman², M. Modreanu³ , ¹ Polytechnic Univ. of Marche, Ancona, Italy, ² IMT Bucharest, Romania, ³ Tyndall National Inst., Univ. College Cork, Ireland.
13:10 – 13:30	PIEZO FORCE MICROSCOPY CHARACTERIZATION OF NOVEL FERROELECTRIC OXIDES FOR ENERGY HARVESTING A. Di Donato¹, M. Aldrigo², L. Pierantoni¹, M. Dragoman², D. Mencarelli¹, E. Laudadio¹, P. Stipa¹, L. Zappelli¹, P. Russo¹, M. Modreanu³ , ¹ Polytechnic Univ. of Marche, Italy, ² IMT Bucharest, Romania, ³ Tyndall National Inst., Univ. College Cork, Ireland.
13:30 – 13:50	DESIGN OF DRAs FOR ALL-SILICON EFFICIENT MILLIMETER-WAVE ENERGY HARVESTERS S. Trovarello, D. Masotti, A. Costanzo , Univ. of Bologna, Italy.

13:40 – 14:30**Break****SEMICONDUCTOR DEVICES 1 (Lectures)**

Chair: D. Dobrescu, Univ. "Politehnica" of Bucharest, Romania

M. Brezeanu, PwC Romania, Bucharest, Romania

14:30 – 14:50	MICROTEXTURED PHOTOVOLTAIC CELLS SYSTEM FOR UAVs AUTONOMY EXTENSION O. Ionescu^{1,2}, I.V. Cernica², E. Manea², M. Purica², C.C. Parvulescu², C. Paun², A. Popescu², ¹ Petroleum and Gas Univ., Ploiesti, ² IMT Bucharest, Romania.
14:50 – 15:10	DETECTING ANOMALOUS BEHAVIOR IN Si MOS CAPACITORS R. Pascu^{1,2,3}, Gh. Pristavu², M. Kusko¹, F. Draghici², Gh. Brezeanu², ¹ IMT Bucharest, ² Univ. "Politehnica" of Bucharest, ³ Univ. of Bucharest, Romania.
15:10 – 15:30	COMPARATIVE STUDY BETWEEN SEMICONDUCTOR POWER DEVICES BASED ON SILICON Si, SILICON CARBIDE SiC AND GALLIUM NITRATE GaN USED IN THE ELECTRICAL SYSTEM SUBASSEMBLY OF AN ELECTRIC VEHICLE I.C. Sburlan, I. Vasile, E. Tudor, INC DIE ICPE-CA, Bucharest, Romania.
15:30 – 15:50	CHARACTERIZATION OF RECONFIGURABLE FETs FABRICATED ON Si EPILAYER ON SiO ₂ S.H. Lee, S.-H. Kim, J.W. Park, T.M. Roh, S. Jung*, D. Suh, Electronics & Telecommunications Research Inst., *Advanced Inst. of Convergence Technology, Republic of Korea.

15:50 – 16:00**Break****INTEGRATED CIRCUITS – Student Papers 1 (Lectures) (parallel session)**

Chairs: V. Anghel, ON Semiconductor Romania S.R.L., Bucharest, Romania

L. Goras, „Gh. Asachi” Technical Univ. of Iasi, Romania

16:00 – 16:20	DESIGN OF 1.8V LVDS TRANSMITTER IN GF 22nm FOR ASSOCIATIVE MEMORY Ram Teja Kothamasu, Venakata M. R. Ganda, Subhakumar R. Ankireddyalli, VEDA IIT, Hyderabad, *INVECAS, Hyderabad, India.
16:20 – 16:40	EXPERIMENTAL COMPARISON OF 8-BIT DIGITALLY PROGRAMMABLE POTENTIOMETERS BASED ON MULTISTAGE ARCHITECTURES G.-C. Ilie (Chiranu)^{1,2}, C. Tudoran¹, Gh. Pristavu², F. Draghici², Gh. Brezeanu², ¹ ON Semiconductor Romania S.R.L., Bucharest, ² Univ. "Politehnica" of Bucharest, Romania.
16:40 – 17:00	COMPARISON BETWEEN PEAK AND AN IMPROVED ONE-CYCLE CURRENT MODE CONTROL OF A BUCK CONVERTER POWER STAGE E. Vladu, N. Braic, M. Neag, O. Pop, Technical Univ. of Cluj-Napoca, Romania.
17:00 – 17:20	A CAPACITOR-LESS LDO WITH HIGH PSR OVER A WIDE FREQUENCY RANGE I. Sularea, C. Răducan, M. Neag, Technical Univ. of Cluj-Napoca, Romania.
17:20 – 17:40	STIMULI REDUNDANCY REDUCTION FOR NONLINEAR FUNCTIONAL VERIFICATION COVERAGE MODELS USING ARTIFICIAL NEURAL NETWORKS M.-C. Cristescu, D. Ciupitu, AMIQ Consulting, Bucharest, Romania.

NANOSCIENCE AND NANOENGINEERING 4 - Posters (parallel session)

Chair: A. Radoi, IMT Bucharest, Romania

V. Teodorescu, National Inst. of Materials Physics, Romania

16:00 – 16:10	UNUSUAL ELECTRONIC PROPERTIES OF THE Bi-Sb NANO- WIDTH BICRYSTAL INTERFACES F.M. Muntyanu, V. Chistol* , E. Condrea, Inst. of Electronic Engineering and Nanotechnologies, Chisinau, *Technical Univ. of Moldova, Chisinau, Moldova.
16:10 – 16:20	PHOTOCATALYTIC ACTIVITY AND STABILITY OF THE ZnO-GO COMPOSITE THIN FILMS C. Bogatu, S. Gheorghita, D. Perniu, C. Obreja* , O. Buiu*, A. Duta, Transilvania Univ. of Brasov, *IMT Bucharest, Romania.
16:20 – 16:30	CHEMICALLY BATH DEPOSITED Sb ₂ S ₃ FILMS AS OPTICAL PHASE CHANGE MATERIALS C. Cobianu^{1,2}, M. Gheorghe¹, M. Modreanu³, Y. Gutierrez⁴, M. Losurdo⁴ , ¹ NANOM MEMS, Rasnov, ² Academy of Romanian Scientists, Science and Information Technology Section, Romania, ³ Tyndall National Inst., Univ. College Cork, Ireland, ⁴ Inst. of Nanotechnology, CNR-NANOTEC, Bari, Italy.
16:30 – 16:40	MEMORY PROPERTIES OF GeZrO ₂ BASED TRILAYER STRUCTURE C. Palade¹, A. Slav¹, M.L. Ciurea^{1,2} , *National Inst. of Materials Physics, *Academy of Romanian Scientists, Romania.
16:40 – 16:50	IMPROVING THE ON-CURRENT OF JUNCTIONLESS CARBON NANOTUBE TUNNELING FETS USING A HEAVILY n-TYPE DOPED POCKET K. Tamersit , Dept. of Electronics and Telecommunications, Dept. of Electrical and Automatic Engineering, PIMIS Laboratory, Univ. 8 Mai 1945 Guelma, Algeria.
16:50 – 17:00	IN-SITU MAGNETRON SPUTTERING CO-DEPOSITION OF Ge NANOPARTICLES IN Si ₃ N ₄ FILMS FOR NEAR INFRARED DETECTION I. Stavarache¹, C. Palade¹, P. Prepelita², V.S. Teodorescu^{1,3}, M.L. Ciurea^{1,3} , ¹ National Inst. of Materials Physics, ² National Inst. for Laser, Plasma and Radiation Physics, ³ Academy of Romanian Scientists, Romania.
17:00 – 17:10	MORPHO-STRUCTURAL AND OPTICAL CHARACTERIZATION OF SILICON NANOWIRES INTENDED FOR MICROARRAY SUBSTRATES M.A. Popescu, I. Mihalache, C. Romanitan, M.C. Popescu* , L. Gogianu, M. Simion, IMT Bucharest, *S.C. Ronexprim S.R.L., Romania.
17:10 – 17:20	ENHANCED PHOTOELECTRICAL PROPERTIES OF NANOSTRUCTURED Si/METAL NANOWIRES HETEROSTRUCTURES I. Mihalache^{1,2}, R. Pascu¹, A. Radoi¹, G. Craciun¹, A. Ficai², M. Kusko¹ , ¹ IMT Bucharest, ² Univ. "Politehnica" of Bucharest, Romania.
17:20 – 17:30	PLA NANOCOMPOSITES WITH ANTIMICROBIAL ACTION, BASED ON OLIVE FRUIT POLYPHENOLS AND CITRUS FRUIT EXTRACTS ENCAPSULATED IN MALTODEXTRIN I.V. Tudose¹, I. Rosca², C. Romanitan³, O.N. Ionescu³, K. Petrotos⁴, S. Zaoutsos⁵, M.P. Suche^{1,3}, E. Koudoumas¹ , ¹ Hellenic Mediterranean Univ., Greece, ² "Petru Poni" Inst. of Macromolecular Chemistry, Iasi, ³ IMT Bucharest, Romania, ⁴ Dept. of Agriculture-Agrotechnology, Univ. of Thessaly, Greece, ⁵ Dept. of Energy Systems, School of Technology, Univ. of Thessaly, Greece.

Friday, October 8, 2021

NANOSCIENCE AND NANOENGINEERING 3 – Student Papers (*Lectures*)

Chair: S. Iftimie, Univ. of Bucharest, Romania

L. Pierantoni, Polytechnic Univ. of Marche, Ancona, Italy

09:00 – 09:20	STRUCTURAL AND ELECTRICAL CHARACTERIZATION OF V ₂ O ₃ ON VARIOUS SUBSTRATES: A COMPARATIVE STUDY M.T. Sultan, K. Ignatova, U.B. Arnalds , Univ. of Iceland, Iceland.
09:20 – 09:40	SYNTHESIS AND PHOTOLUMINESCENCE STUDY OF SILICON NANOWIRES OBTAINED BY METAL ASSISTED CHEMICAL ETCHING E. Fakhri¹, M.T. Sultan², A. Manolescu¹, S. Ingvarsson², N. Plugaru³, R. Plugaru³, H.G. Svavarsson¹ , ¹ Reykjavik Univ., ² Univ. of Iceland, Iceland, ³ IMT Bucharest, Romania.
09:40 – 10:00	OPTICAL AND STRUCTURAL CHARACTERIZATION OF THIN MoS ₂ LAYERS ON SiO ₂ /Si SUBSTRATES, TOWARDS THE DEVELOPMENT OF MoS ₂ /Si HETEROJUNCTION PHOTOVOLTAICS B. Zerbo¹, M. Modreanu², I. Povey², A. Létoublon¹, A. Rolland¹, L. Pédesseau¹, J. Even¹, B. Lépine³, P. Turban³, P. Schieffer³, A. Moréac³, O. Durand¹ , ¹ Inst. FOTON-UMR 6082, France, ² Tyndall National Inst., Univ. College Cork, Ireland, ³ Univ Rennes, CNRS, France.
10:00 – 10:20	TERBIUM COMPLEX GRAFTED ON SILICA NANOPARTICLES WITH POTENTIAL APPLICATION FOR METAL ION SENSING BY FLUORESCENCE QUENCHING M.C. Stoian^{1,2}, I. Mihalache², M. Matache¹, A. Radoi² , ¹ Univ. of Bucharest, ² IMT Bucharest, Romania.
10:20 – 10:40	STRUCTURAL AND COMPOSITION OF CU-DOPED ZnTe THIN FILMS WITH DIFFERENT CONCENTRATIONS BY IMMERSION IN Cu(NO ₃) ₂ SOLUTION I. Lungu , Moldova State Univ., Moldova.

10:40 – 11:00

Break

INTEGRATED CIRCUITS (*Lectures*) (*parallel session*)

Chair: C. Dan, Univ. "Politehnica" of Bucharest, Romania

A. Tulbure, "1 Decembrie 1918" Univ. Alba Iulia, Romania

11:00 – 11:20	MULTI-OBJECTIVE OPTIMIZATION ALGORITHMS FOR AUTOMATED CIRCUIT SIZING OF ANALOG/ MIXED-SIGNAL CIRCUITS M. Stănescu, C. Vișan, G. Sandu, H. Cucu, C. Diaconu*, A. Buzo*, G. Pelz* , Univ. "Politehnica" of Bucharest, *Infineon Technologies Romania, Bucharest, Romania.
11:20 – 11:40	TCAD STUDY OF LATCH-UP SENSITIVITY TO WAFER THINNING BELOW 500 nm G. Hiblot, K. Serbulova, G. Hellings, S.-H. Chen , IMEC, Leuven, Belgium.
11:40 – 12:00	CHANGING THE PARADIGM IN COMMON MODE TRANSIENT IMMUNITY (CMTI) TESTING OF DUAL CHANNEL GALVANICALLY ISOLATED GATE DRIVERS F. Vladoianu^{1,2}, M. Strelec², I. Hurez^{1,2}, V. Anghel², G. Brezeanu¹ , ¹ Univ. "Politehnica" of Bucharest, ² ON Semiconductor Romania S.R.L., Bucharest, Romania.
12:00 – 12:20	A DUAL LOW VOLTAGE CHOPPER OFFSET-STABILIZED OPERATIONAL AMPLIFIER C. Stanescu, C. Dinca, A. Veselu, R.A. Cojan, A. Sevcenco, V. Bricicaru, A. Croitoru , ON Semiconductor Romania S.R.L., Bucharest, Romania.
12:20 – 12:40	MIXED-SIGNAL ADAPTIVE PRIMARY SIDE POWER CONTROL Gh. Turcan, N.A. Braic, M. Neag, M. Topa , Technical Univ. of Cluj-Napoca, Romania.
12:40 – 13:00	CURRENT-MODE QUADRATURE RING OSCILLATOR FOR BIOIMPEDANCE APPLICATIONS Z. German-Sallo, R. Groza, R. Onet, M. Neag , Technical Univ. of Cluj-Napoca, Romania.

11:00 – 12:00	“MICRO-NANOTECHNOLOGIES IN HORIZON EUROPE CALLS” Event organized by CESMIN project (parallel session) Details: https://www.imt.ro/cas/events.php
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12:00 – 13:40	“DRIVING TALENTED ORGANISATIONS TO SUCCESSFUL HORIZON EUROPE PROJECTS” Event organized by FIT-4-NMP H2020 project (parallel session) Details: https://www.imt.ro/cas/events.php
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13:40 – 14:00	Break
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INTEGRATED CIRCUITS – Student Papers 2 (Lectures)	
Chair: Gh. Stefan, Univ. “Politehnica” of Bucharest, Romania F. Udrea, Univ. of Cambridge, UK	
14:00 – 14:20	A NOVEL APPROACH TO THE STABILITY ANALYSIS OF CONDITIONALLY STABLE CIRCUITS V. Beleca, C.-S. Plesa, R. Onet, M. Neag , Technical Univ. of Cluj-Napoca, Romania.
14:20 – 14:40	A VERY LOW QUIESCENT CURRENT LINEAR VOLTAGE REGULATOR WITH WIDE INPUT VOLTAGE AND WIDE LOAD CURRENT RANGE FOR AUTOMOTIVE APPLICATIONS I.-A. Ilie^{1,2}, C.Ş. Zegheru¹, A.-G. Băjenaru¹, Gh. Brezeanu² , ¹ Infineon Technologies Romania Bucharest, ² Univ. “Politehnica” of Bucharest, Romania.
14:40 – 15:00	UTILIZING DIFFERENTIAL EVOLUTION FOR AN AUTOMATED COMPACT MODEL PARAMETER EXTRACTION M. Huppmann, K.-W. Pieper*, A. Buzo*, L. Maurer, G. Pelz , *Univ. der Bundeswehr München, Neubiberg, *Infineon Technologies AG, Neubiberg, Germany.
15:00 – 15:20	REVERSE POLARITY PROTECTION FOR AUTOMOTIVE NMOS LDO P. Pop, G. Petrasuc, C.-S. Plesa, M. Neag, T. Salajan* , *Technical Univ. of Cluj-Napoca, *Infineon Technologies Romania, Bucharest, Romania.

NANOSCIENCE AND NANOENGINEERING 2 (Lectures)	
Chair: M. Ciurea, National Institute of Materials Physics, Romania M. Kusko, IMT Bucharest, Romania	
15:20 – 15:40	TiO ₂ - rGO COMPOSITE THIN FILMS IN VIS-ACTIVE PHOTOCATALYSIS I. Tismanar, A.C. Obreja*, O. Buiu*, A. Duta , “Transilvania” Univ. of Brasov, *IMT Bucharest, Romania.
15:40 – 16:00	DYE ELECTRONEGATIVITY-INDUCED VOLTAGE LOSSES IN DSSCs M. Mihaila , IMT Bucharest, Romania.
16:00 – 16:20	FACILE FORMATION OF SELF-ASSEMBLED Ga DROPLETS ON GaAs (001) SUBSTRATE M.T. Sultan, H.Ö. Arnason*, S. Ingvarsson, U.B. Arnalds, H.G. Svavarsson*, A. Manolescu*, A. Valfells* , Univ. of Iceland, Reykjavik, *Reykjavik Univ., Iceland.
16:20 – 16:40	WAFER-LEVEL FABRICATION OF NANOCONES STRUCTURES BY UV-NANOIMPRINT AND CRYOGENIC DEEP REACTIVE ION PROCESS O. Rasoga¹, C. Thanner², O. Semenova², A.M. Avram³, L.-I. Jinga⁴ , ¹ National Inst. of Materials Physics, Romania, ² EV Group, Austria, ³ IMT Bucharest, ⁴ National Inst. for Lasers, Plasma and Radiation Physics, Romania.

16:40 – 17:00	Break
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17:00	Closing Remarks and Awards Ceremony
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