



INTERNATIONAL SEMICONDUCTOR CONFERENCE

CAS 2019 - an IEEE event

SINAIA, ROMANIA, 9-11 OCTOBER 2019

<http://www.imt.ro/cas/>

CAS 2019 Preliminary Programme

version: August 30, 2019

Conference Organiser: National Institute for R&D in Microtechnologies - IMT Bucharest, Romania

		BRAN Room	PELES Room
8 Oct. Tuesday	15:00 - 18:00	Registration	
	20:30	Welcome Cocktail CAS 2019 - <i>New Montana Hotel Restaurant</i>	
DAY 1 9 Oct. Wednesday	08:30-09:00	Registration	
	09:00-09:15	Welcome to CAS 2019, <i>Miron Adrian Dinescu, IMT Bucharest, Romania - CAS 2019 General Chairman</i>	
	09:15- 11:15	<p style="text-align: center;">PLENARY SESSION 1 (Invited Papers) Session: PS1: Oral presentations</p> <p>Chairs: Raluca Müller, IMT Bucharest, Romania Mircea Dragoman, IMT Bucharest, Romania</p>	
	09:15	Edge AI Semiconductors for a Healthy You , <i>Adrian M. Ionescu, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland</i>	
	09:45	Smart Beamforming for energy-aware wireless power transmission , <i>D. Masotti*, M. Shanawani*, A. Costanzo**, DEI-University of Bologna, Bologna, ** DEI-University of Bologna, Cesena,</i>	
	10:15	Epitaxy and polarization engineering for future III-Nitride heterostructure devices , <i>Eleftherios Iliopoulos, University of Crete, Greece</i>	
	10:45	The challenges of Mechanistic Stochastic Patterning and the promise of Atomic Layer Processing , <i>Mircea Dusa, IMEC, Belgium</i>	
	11:15-11:40	Coffee break	
	11:40-13:00	<p style="text-align: center;">NANOSCIENCE AND NANOENGINEERING 1 Session N&N1: Oral presentations</p> <p>Chairs: Magdalena Ciurea, National Institute of Materials Physics, Romania Octavian Buiu, IMT Bucharest, Romania</p>	<p style="text-align: center;">NANOMATERIALS AND SENSORS - STUDENT PAPERS Session N&S - S: Oral presentations</p> <p>Chairs: Lidia Dobrescu, "Politehnica" Univ. of Bucharest, Romania Martino Aldrigo, IMT Bucharest, Romania</p>
	11:40	Experimental Characteristics of Organic Transistor with Silver Gate , <i>C. Ravariu¹, D.E. Mihaiescu², D. Istrati², A. Morosan², ¹UPB-University "Politehnica" of Bucharest, Faculty of Electronics ETTI, Dept. of Electronic Devices Circuits and Architectures, Romania; ²UPB-University</i>	Top-Down Method for Lab-Scale Production of Nanocrystals of Active Pharmaceutical Ingredients – Formulation Approach and Selection of Optimal Process Parameters , <i>I. Nikolic and S. Savic, University of Belgrade – Faculty of Pharmacy, Belgrade, Serbia, D. Randjelovic,</i>

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	<i>"Politehnica" of Bucharest, Faculty of Applied Chemistry, Dept. of Organic Chemistry "C. Nenitescu", Romania</i>	<i>University of Belgrade, Institute of Chemistry, Technology and Metallurgy, D.J. Lunter, Institute of Pharmaceutical Technology, Eberhard-Karls University, Tuebingen, Germany,</i>
12:00	New Approaches Towards chemosensing , D. Przychyna, K. Pilarczyk, A. Blachecki, V. Gorokh, and K. Szaciłowski, <i>Academic Centre for Materials and Nanotechnology AGH University of Science and Technology, Poland</i>	Voltammetric Determination of Bisphenol a with a silver-Reduced graphene Oxide Composite Paste Microsensor , L.A. Gugoasa ^{A*} , R.I.S-van Staden ^A , J.F. van Staden ^A , M. Coros ^B , S. Pruneanu ^B , ^A <i>National Institute of Research for Electrochemistry and Condensed Matter, Bucharest-6, Romania;</i> ^B <i>National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania</i>
12:20	Facile 3D Nanostructured ZnO-graphene Hybrids for Gas Sensing Applications , C. Cobianu ^{1,2} , N. Dumbravescu ^{1,2} , B. Serban ^{1,2} , O. Buiu ^{1,2} , F. Comanescu ¹ , C. Romanitan ¹ , M. Danila ¹ , V. Avramescu ¹ and O. Ionescu ^{1,2} , ¹ <i>National Institute for Research and Development in Microtechnologies - IMT Bucharest, Romania.</i> ² <i>Research Center for Integrated Systems, Nanotechnologies and Carbon-Based Nanomaterials (CENASIC) - IMT Bucharest, Romania</i>	Enhancement of SPR Signal Using Gold nanorods , E. Constantin, M. Simion, M. Popescu, A. Boldeiu, I. Mihalache, <i>National Institute for Research and Development in Microtechnologies (IMT Bucharest), Romania</i>
12:40	TiO₂ – graphene Oxide Composite As Photocatalytic Material , I. Tismanar*, A. C. Obreja**, O. Buiu**, A. Duta*, <i>Transilvania University of Brasov, Romania,</i> ** <i>National R&D Institute R&D for Microtechnologies, Bucharest, Romania</i>	
13:00-13:15	PHOTO "REMEMBER CAS 2019"	
13:15-14:30	Lunch	
14:30-16:10	MICROSENSORS AND MICROSYSTEMS 1 <i>Session M&M1: Oral presentations</i>	MICRO- AND NANOPHOTONICS <i>Session N&MN: Oral presentations 5 papers</i>
	Chairs: Raluca Müller , IMT Bucharest, Romania Claudius Dan , "Politehnica" Univ. of Bucharest, Romania	Chairs: Dana Cristea , IMT Bucharest, Romania Daniela Dragoman , Univ. of Bucharest, Romania
14:30	Technology and Optimizations for the NOI-nano-Triode , C. Ravariu ¹ , C. Parvulescu ² , V.M. Placinta ¹ , ¹ <i>UPB-University "Politehnica" of Bucharest, Faculty of Electronics ETTI, Dept. of Electronic Devices Circuits and Architectures, Romania;</i> ² <i>IMT - National Institute for Development and Research of Microtechnology, Romania</i>	Semiconductor-Dielectric metasurfaces for low-Loss Field Concentrators in the Optical Range , M. Obradov, Z. Jakšić, D. Tanasković, O. Jakšić, D. Vasiljević Radović, <i>Center of Microelectronic Technologies, Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Serbia</i>

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	14:50	The Effect of Magnetostrictive metallizations on the Behaviour of GaN/Si SAW Resonators in Magnetic Field , A. Nicoloiu ¹ , F. Ciubotaru ² , C. Nastase ¹ , A. Dinescu ¹ , S. Iordanescu ¹ , D. Vasilache ¹ , H. Ahmad ² , P. Pirro ³ , C. Adelmann ² and A. Müller ¹ , ¹ IMT Bucharest, ROMANIA, ² IMEC Leuven, BELGIUM and ³ TU Kaiserslautern, GERMANY	Fabrication of Multilevel axicon for nondiffractive OAM Beams , R. Tudor, M. Kusko, C. Kusko, C. Parvulescu, A. Avram, V. Avramescu, <i>National Institute for R&D in Microtechnology IMT, Bucharest, 077190, Romania</i>
	15:10	Use of 4H-SiC-Based Diodes As Temperature Sensors , F.G. Della Corte, G. Pangallo, S. Rao, R. Carotenuto, D. Iero, M. Merenda, F. Pezzimenti, <i>DIIES, Mediterranea University, Reggio Calabria, Italy, E-mail: franc</i>	Metamaterials Infrared Absorbers for Gas Sensing , R. Calinoiu, R. Tomescu, D. Cristea, <i>National Institute for R&D in Microtehnologies – IMT Bucharest (STUDENT)</i>
	15:30	Phonon-Assisted Charge Transfer at Metal-Oxide-Gas Interface , Mihai Mihaila, <i>National Institute of Research and Development in Microtechnologies - IMT Bucharest, Romania</i>	Numerical Investigation of SPR Sensors Coated with Tin Selenides Monolayers , P. Varasteanu ^{1,2} , ¹ National Institute for R&D in Microtechnology - IMT Bucharest, Romania, ² Faculty of Physics, University of Bucharest, Romania (STUDENT)
	15:50	Sensing Gas Type and Pressure with Multipurpose Device Based on Seebeck Effect , D.V. Randjelović, B. Popović, P. Poljak, O. Jakšić, <i>Centre of Microelectronic Technologies, Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Serbia</i>	Chromium yellow-Based Optoelectronic Device Exhibiting light-switchable memristive Properties , D. Przychyna ^[a, b] , P. Zawal ^[a, b] , K. Pilarczyk ^{[a]*} and K. Szaciłowski ^{[a]*} , ^[a] Academic Centre for Materials and Nanotechnology, AGH University of Science and Technology, ^[b] Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Poland
	16:10-16:30	Coffee break	
	16:30-18:10	DIGITAL INNOVATION <i>Session DI: Oral presentations</i>	MODELLING & SEMICONDUCTOR DEVICES – STUDENT PAPERS <i>Session M&SD - S: Oral presentations</i>
		Chairs: Gheorghe Stefan , “Politehnica” Univ. of Bucharest, Romania	Chairs: Dragos Dobrescu , “Politehnica” Univ. of Bucharest, Romania Adrian Tulbure , “1 Decembrie 1918” University, Alba Iulia, Romania
	16:30	Nano-Structural Requirements for Artificial Intelligence & Blockchain Applications , R. Mihai*, M. Malița**, G.M. Ștefan***, *Politehnica University of Bucharest, **Saint Anselm College, ***Politehnica University of Bucharest	Verilog-a Model for a Switched-Capacitor DC-DC Converter , N. Braic*, C. Raducan*, M. Neag*, V. Ionescu**, *Technical University of Cluj-Napoca, Basis of Electronics Department, 400027, Romania, **Infineon Technologies Romania
	16:50	Singular Value Decomposition to Determine the Dynamics of a Chaotic Regime Oscillator , O. Datcu, R. Hobincu, C. Macovei, <i>University POLITEHNICA of Bucharest, Electronics, Telecommunications and Information Technology, Bucharest, Romania</i>	Improvement on Well Design and Operation of Potential Well Barrier Diodes , M. Akura*, G. Dunn* and M. Missous**, *Department of Electronic Engineering, University of Aberdeen, AB25 3UE, UK, **Department of Electronic Engineering, University of Manchester, M13 9PL, UK

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	17:10	Discrete Gravitational Search Algorithm (DGSA) Applied for the Close-Enough Travelling Salesman Problem (TSP / CETSP) , M. Antonescu, C. Bîră, <i>Politehnica University of Bucharest, Faculty of Electronics, Telecommunications and Information Technology</i>	Artificial Neuron As Information pre-Processing Agent , D. Przyczyna, M. Lis, K. Pilarczyk* and K. Szaciłowski*, <i>AGH University of Science and Technology, al. A Mickiewicza 30, 30-059 Kraków, Poland</i>
	17:30	Automated Segmentation of Pigmented Skin Lesions Images for Smartphone Applications , I. Pirnog, I. Marcu, C. Oprea, <i>Department of Telecommunications, Faculty of Electronics, Telecommunications and Information Technology, University, Politehnica of Bucharest, Romania</i>	Depth Profiling of GaN by High Resolution X-Ray Diffraction , C. Romanitan, <i>National Institute of R&D in Microtechnology, IMT Bucharest, Romania, Faculty of Physics, Romania</i>
	17:50	Digital Filters for Sigma-Delta Modulation in Wireless Communications , I. Pirnog, I. Marcu, A.M.C. Drăgulinescu, C. Oprea, <i>*Department of Telecommunications, Faculty of Electronics, Telecommunications and Information Technology, University Politehnica of Bucharest, Romania</i>	Application-Aware Lifetime Model for Power Devices Based on Electro-Thermal Simulation , C.V. Pop ^{1,2} , A. Buzo ² , C.V. Diaconu ² , G. Pelz ² , H. Cucu ¹ , C. Burileanu ¹ , <i>¹University Politehnica of Bucharest, Romania, ²Infineon Technologies, Neubiberg, Germany</i>
END OF DAY 1			

		BRAN Room	PELES Room
DAY 2 10 Oct. Thursday	09:00-11:00	PLENARY SESSION 2 (Invited Papers) Session PS2: Oral presentations Chairs: Adrian Ionescu , EPFL, Switzerland Alexandru Müller , IMT Bucharest, Romania	
	09:00	Magnetoelectric devices for spintronic applications, <i>Christoph Adelmann</i>, IMEC, Belgium	
	09:30	Towards monolithic quantum computing processors in production FDSOI CMOS technology, <i>Sorin Voinigescu</i>, University of Toronto, Canada	
	10:00	Spin cluster qubits in molecular and semiconductor systems, <i>Filippo Troiani</i>, Istituto Nanoscienze-CNR, Italy	
	10:30	Logic gates based on spin waves, <i>Florin Ciubotaru</i>, IMEC, Belgium	
	11:00-11:20	Coffee break	
	11:20-13:20	NANOSCIENCE AND NANOENGINEERING 2 Session N&N2: Oral presentations Chairs: Mihaela Kusko , IMT Bucharest, Romania Andrei Avram , IMT Bucharest, Romania	INTEGRATED CIRCUITS - STUDENT PAPERS Session IC - S: Oral presentations Chairs: Florin Draghici , "Politehnica" Univ. of Bucharest, Romania Vlad Anghel , ON Semiconductor, Bucharest, Romania
	11:20	Graphene Quantum Dots – Polymer (GQDs – PEG600) Nanocomposite As Electrode Modifier for Anthracene Determination, <i>C. Ciobanu</i>[*], <i>M.C. Stoian</i>, <i>A.A. Apostol</i>, <i>A. Radoi</i>[*], <i>National Institute for Research and Development in Microtechnology – IMT Bucharest, Romania</i>	Optimizing GZIP Compression Accelerator for Zynq FPGAs, <i>O. Plugariu</i>[*], <i>DCAE Department, University "Politehnica" of Bucharest, Romania</i>
	11:40	Controlling SWIR Photosensitivity Limit by Composition engineering: from Ge to GeSi Nanocrystals Embedded in TiO₂, <i>I. Dascalescu</i>^{**}, <i>O. Cojocaru</i>[*], <i>I. Lalau</i>[*], <i>C. Palade</i>[*], <i>A. Slav</i>[*], <i>A.M. Lepadatu</i>[*], <i>S. Lazanu</i>[*], <i>T. Stoica</i>[*], <i>M.L. Ciurea</i>^{***}, <i>National Institute of Materials Physics, 077125 Magurele, Romania</i>, <i>**University of Bucharest, Faculty of Physics, Romania</i>, <i>***Academy of Romanian Scientists, Romania</i>	Gain-Boosting Stage Frequency Response Optimization, <i>Tarik Azis</i>, <i>Faculty of Electronics, Telecommunications and Information Technology, "Politehnica" University of Bucharest</i>
	12:00	Direct Writing of Prussian Blue Patterns Down to Micrometer scale: Preliminary Tests Results, <i>C. Pachiu</i>, <i>M. Carp</i>, <i>A. Radoi</i>, <i>R. Popa</i>, <i>M. Suchea</i>, <i>O. Tutunaru</i>, <i>National Institute for Research and Development in Microtechnologies - IMT Bucharest, Bucharest, Romania</i>	Performance Analysis for High Resolution Digitally Programmable Potentiometers, <i>G.-C. Ilie (Chiranu)</i>^{* **}, <i>C. Tudoran</i>[*], <i>O. Neagoe</i>[*], <i>G. Brezeanu</i>^{**}, <i>ON Semiconductor Romania</i>, <i>**Faculty of Electronics, Telecommunications and Information Technology, University Politehnica</i>

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			<i>of Bucharest</i>
	12:20	EMI Shielding Flexible Thin Films Based on graphene-MWCNT Nanocomposites , A.C. Obreja ¹ , V. Buiculescu ¹ , R. Gavrilă ¹ , F. Comanescu ¹ , V. Tucureanu ¹ , O. Tutunaru ¹ , M. Dragoman ¹ , ¹ <i>National Institute for Research and Development in Microtechnologies (IMT-Bucharest</i>	Capacitor Multiplier with One Transconductor Cell , P. Coste*, P. Martari*, M. Neag*, V. Ionescu**, <i>*Technical University of Cluj-Napoca, Basis of Electronics Department, Romania,* **Infineon Technologies Romania</i>
	12:40	Effect of Temperature and Frequency on Dielectric Properties of Heterostructures Based on Ultrathin Ferroelectric Films of Hf/Zr Oxides , C. Berbecaru*, D. Dragoman*, M. Dragoman**, F. Nastase**, <i>*University of Bucharest, Faculty of Physics - Electricity, Solid State and Biophysics Department, Bucharest, Romania, **National Institute for Research and Development in Microtechnologies - IMT, Bucharest, Romania</i>	Coverage Fulfillment Methods As Key Points in Functional Verification of Integrated Circuits , A. Dinu, P.L. Ogruțan, <i>Transilvania University of Brasov, Electronic and Computers Department, Brasov, Romania</i>
	13:00		Enhanced Ripple Blocker , M. E. Bundaru*, D. Dobrescu*, E. Franți**, M. Enăchescu*, M. Dascălu*, L.Dobrescu*, <i>*University POLITEHNICA of Bucharest, **IMT Bucharest</i>
	13:20-14:00	Lunch	
	14:00-20:00	Trip to BRAN Castle („Dracula Castle”)	
END OF DAY 2			

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DAY 3 11 Oct. Friday	09:00-11:00	PLENARY SESSION 3 (Invited Papers) Session PS3: Oral presentations Chairs: Gheorghe Brezeanu , "Politehnica" Univ. of Bucharest, Romania Dan Neculoiu , IMT Bucharest, Romania		
	09:00	Fan-Out Enhanced Reconfigurable Spin Wave Based Logic , <i>Sorin Cotofana</i> , Delft University of Technology, Netherlands		
	09:30	Millimeter-Wave Integrated Silicon Devices: Active versus Passive - The Eternal Struggle Between Good and Evil , <i>M. Spasaro and D. Zito</i> , Department of Engineering - Electrical and Computer Engineering, Aarhus University, Denmark		
	10:00	Physics and design of a breakdown rugged Insulated Gate Bipolar Transistor , <i>Ettore Napoli</i> , University of Naples Federico II, Italy		CAS 2019 Workshop „Sensors and Integrated Systems for Security and Health Applications” - I Chairs: Mariuca Gartner , "Ilie Murgulescu" Inst. of Physical Chemistry, Bucharest, Romania Peter Petrik , Inst. for Technical Physics and Materials Science, Hungary Sensors Array with Biochemical Layer for Multiple Detection of Explosives Substances , C. Moldovan*, A. Anghelescu*, G. Muscalu*, S. Dinulescu*, C. Brasoveanu*, B. Firtat*, M. Savin*, *National Institute for Research and Development in Microtechnologies – IMT Bucharest
	10:30	RF Energy Harvesting and Wireless Power Transfer , <i>Alexandru Takacs</i> , Laboratory for Analysis and Architecture of Systems LAAS-CNRS, France		MEMS Piezoelectric Energy Harvester for Portable Systems and inaccessible Sensors Networks , B. Firtat*, S. Dinulescu*, G. Muscalu*, C. Moldovan* A. Anghelescu*, S.

		BRAN Room	PELES Room	CANTACUZINO Room
				Ioniță**, M. Răducu**, A.D. Coman**, M. Gartner**, National Institute for Research and Development in Microtechnologies – IMT Bucharest, **Pitești University, *** "Ilie Murgulescu" Inst. of Physical Chemistry, Bucharest, Romania
	11:00-11:20	Coffee break		
	11:20-13:20	<p style="text-align: center;">INTEGRATED CIRCUITS <i>Session IC: Oral presentations</i></p> <p>Chairs: Mircea Bodea, "Politehnica" Univ. of Bucharest, Romania Marius Neag, Technical Univ. of Cluj-Napoca, Romania</p>	<p style="text-align: center;">MICROWAVE AND MILLIMETER WAVE CIRCUITS AND SYSTEMS <i>Session MW: Oral presentations</i></p> <p>Chairs: Domenico Zito, Aarhus Univ., Denmark Alexandru Takacs, LAAS-CNRS, France</p>	
	11:20	A 5.5-V 7-MHz UGBW Dual Rail-to-Rail CMOS Op Amp with Enable Pin and Hi-Z Output Feature , C. Stanescu*, C. Dinca*, D. Paul**, *ON Semiconductor Romania S.R.L., Integrated Circuits Division, Bucharest, Romania, **ON Semiconductor, Integrated Circuits Division, Phoenix, Arizona, U.S.A.	Archimedean Spiral Antenna with Coplanar Waveguide Feed , A.C. Bunea*, D. Neculoiu**, A. Avram*, M. Iovea**, *National Institute of R&D in Microtechnologies Bucharest, Romania, **"Politehnica" University of Bucharest, Romania, ***ACCENT PRO 2000 Ltd., Bucharest, Romania	Piezoelectric 1-D Nanostructures for the Energy Harvesting Applications , M. Chelu*, H. Stroescu*, J. Calderon Moreno*, M. Anastasescu*, S. Preda*, M. Gartner*, C. Moldovan**, M. Gheorghe***, *Romanian Academy "Ilie Murgulescu", Institute of Physical Chemistry, 060021 Bucharest, Romania, **National Institute for Research and Development in Microtechnologies, 077190 Bucharest, Romania, ***NANOM MEMS SRL, Râșnov, Romania
	11:40	Latest Concept to Generate Temperature Compensated Voltage Reference , V. Banu*, M. Popescu**, P. Godignon***, *D+T Microélectronica A.I.E. Campus UAB, Spain, **National Institute for Research and Development in Microtechnologies – IMT, Bucharest, Romania, ***IMB-CNM, CSIC, Campus UAB, Catalunya, Spain	Broadband Y-Type Divider in Ku-Band Using Substrate Integrated Waveguide , Y. Fu*, K. Y. Chan*, M. G. Banciu**, R. Ramer*, *University of New South Wales, Sydney, NSW, Australia, **National Institute of Materials Physics, Bucharest-Magurele, Romania	Nickel Silicide Compounds Investigation Obtained at Low and High Temperatures , R. Pascu ¹ , C. Romanitan ¹ , O. Tutunaru ¹ , F. Comanescu ¹ , M. Kusko ¹ , G. Pristavu ² , G. Brezeanu ² , ¹ National Institute for R&D in Microtechnology - IMT Bucharest, Romania, ² University "Politehnica" of Bucharest, Romania

		BRAN Room	PELES Room	CANTACUZINO Room
	12:00	A Disruptive Technology – Improving Half-Bridge Gate Driver Performances Using Galvanic Isolation , I. Hurez ^{*,**} , V. Anghel ^{**} , F. Vlădoianu ^{**} , G. Brezeanu [*] , [*] University "Politehnica" of Bucharest, Romania, ^{**} ON Semiconductor Romania	Microwave Detection with MoS₂-Based self-Switching Diodes , M. Aldrigo [*] , M. Dragoman [*] , S. Iordanescu [*] , A. Dinescu [*] , D. Vasilache [*] , I. Povey ^{**} , M. Modreanu ^{**} , [*] IMT Bucharest, Romania, ^{**} Tyndall National Institute-University College Cork, Ireland	Voltage Controlled Oscillator for Small-Signal Capacitance Sensing , A. Enache [*] , F. Drăghici [*] , G. Pristavu [*] , G. Brezeanu [*] , [*] University "Politehnica" of Bucharest, Romania
	12:20	A Fast Response Output Buffer for an I²C High Speed Interface , A. Dragan ^{1, 2} , A. Enache ² , A. Negut ¹ , A. Macarie Tache ¹ , G. Brezeanu ² , ¹ ON Semiconductor Romania, ² University "Politehnica" of Bucharest, Romania	Frequency Selective Surfaces with Hexagonal Elements for Millimeter Waves Applications , M.G. Banciu, D.C. Geambasu, L. Nedelcu, L. Trupina, National Institute of Materials Physics, Magurele, Jud. Ilfov	Surface-enhanced optical detection using multilayers in internal reflection ellipsometry , Petrik ¹ , B. Kalas ¹ , K. Ferencz ² , M. Serényi ¹ , G. Sáfrán ¹ , M. Fried ¹ , M. Stoica ³ , M. Gartner ³
	12:40	G_m Based Voltage Mode Capacitance Multiplier , G. Bonteanu ¹ , A. Cracan ¹ and L. Goras ^{1,2} , ¹ "Gheorghe Asachi" Technical University of Iasi, ² Institute of Computer Science, Romanian Academy, Iasi Branch		Combinatorial Biosensing by Total Internal Reflection Spectroscopic Ellipsometry , B. Kalas [*] , M. Serényi [*] , G. Sáfrán [*] , M. Fried [*] , P. Petrik [*]
	13:00	Process Capability Evaluation for Fabrication of ASIC IR-UWB Transceivers , N. Varachiu [*] , J.-L. Noullet ^{**} , A. Rumeau ^{**} , D. Dragomirescu ^{**} , [*] National Institute for R&D in Microtechnology IMT-Bucharest, ^{**} LAAS-CNRS, Universite de Toulouse, CNRS, INSA, Toulouse, France		
	13:00-14:30	Lunch		
	14:30-16:30		MODELLING AND SEMICONDUCTOR DEVICES Session M&SD: Oral presentations Chairs: Ettore Napoli , University of Naples Federico II, Italy Mihai Brezeanu , PwC Romania	CAS 2019 Workshop „Sensors and Integrated Systems for Security and Health Applications” - II Chairs: Carmen Moldovan , IMT Bucharest, Romania Nicu Goga , "Politehnica" Univ. of Bucharest, Romania
	14:30		A New Tunnelling Model to Calculate GIDL Current for MOSFET and TFET , A. Sen, J. Das, Dept. of Physics, Jadavpur University, Kolkata, India	Design and Fabrication of a New Flexible Pressure Sensor for Health Application , M. Ion, C. Moldovan, S. Dinulescu, M. Savin, National Institute for Research and

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				<i>Development in Microtechnologies, Bucharest, Romania</i>
	14:50		Comparison and Simulation Study of Cylindrical GAA NWMBCFET for Sub 5 nm , S. Ashok Kumar*, J. Charles Pravin**, * <i>Research Scholar, Department of ECE, Kalasalingam Academy of Research and Education, India</i> , ** <i>Associate Professor, Department of ECE, Kalasalingam Academy of Research and Education, India</i>	Polyaniline Working Electrodes for Glucose Sensing , C.M. Mihailescu ¹ , C.A. Moldovan ¹ , C. Brasoveanu ¹ , M. Savin ¹ , S. Dinulescu ¹ , B. Firtat ¹ , C. Codreanu ¹ , I. Ceausu ² , I. Stanciu ³ , ¹ <i>National Institute for Research and Development in Microtechnologies - IMT Bucharest</i> , ² <i>Universitatea de Medicina si Farmacie „Carol Davila”</i> , ³ <i>Universitatea Politehnica din Bucuresti</i>
	15:10		Atomistic Models of Nanosystems , Titus Sandu, <i>National Institute for Research and Development in Microtechnologies - IMT</i>	Enabling Technologies and Research Challenges for Internet of Things for Healthcare Systems , I. Stanciu*, C. Codreanu**, N. Goga***, I. Marin*, A. Oanca*, * <i>University Politehnica of Bucharest, Department of Engineering in Foreign Languages</i> , ** <i>National Institute for Research and Development in Microtechnologies, Bucharest, Romania</i> , *** <i>Molecular Dynamics Group, University of Groningen, the Netherlands</i>
	15:30		Signal Classification with a Single Memristor in Reservoir System , E. Właźlak*, M. Marzec*, P. Zawal**, K. Szaciłowski*, * <i>Academic Centre for Materials and Nanotechnology, AGH University of Science and Technology, Kraków, Poland</i> , † <i>Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Kraków, Poland</i>	Data Analysis for Blood Pressure Microsensors Based on Arterial Tonometry , I. Stanciu*, * <i>University Politehnica of Bucharest, Department of Engineering in Foreign Languages</i>
	15:50		Experimental and Theoretical Evidence of Photocurrent Amplification in Hybrid Material Based on Dibenzo-18-Crown-6 , M. Lis, K. Pilarczyk, K. Szaciłowski*, <i>AGH University of Science and Technology, Poland</i>	An Intelligent System for the Detection of Preeclampsia , I. Marin*, N. Goga*, **, A. Vasilateanu*, A. Grădinaru***, V. Racoviță****, * <i>Faculty of Engineering in Foreign Languages, University Politehnica of Bucharest, Romania</i> , ** <i>Molecular Dynamics Group, University of Groningen, the Netherlands</i> , *** <i>Computer Graphics Department, University Politehnica of</i>

	BRAN Room	PELES Room	CANTACUZINO Room
			Bucharest, Romania, **** SC Info World SRL, Bucharest, Romania
16:00		New Extraction Method for Bipolar Transistor Model Parameters Used in Bandgap Type Voltage Reference , S. Marinca*, M. Bodea**, A. Stiglet***, B. Baron****, *INFINEON Ro, **UP Bucuresti, ***INFINEON Ro, ****INFINEON Ro	
16:15-16:30	Coffee break		
16:30-19:00	POSTERS SESSIONS – BRAN ROOM		
	<p style="text-align: center;">NANOSCIENCE AND NANOENGINEERING 3 <i>Session N&N3: Poster Session</i></p> <p>Chairs: Mircea Dusa, IMEC, Belgium Cristian Kusko, IMT Bucharest, Romania</p> <ul style="list-style-type: none"> ▪ Electrochemical Synthesis of Composite Cu-Cu₂O Films, K. Mech, M. Bisztyga-Szklarz, M. Marzec, K. Szaciłowski, AGH University of Science and Technology, Academic Centre for Materials and Nanotechnology, Poland ▪ Resistive Properties of Carbon Black Inkjet Printed Layers, A. E. Gieva*, B. G. Nikolov**, C. B. Nikolova*** and D. I. Ruskova*, *A. Department of Microelectronics, Technical University of Sofia, Sofia, Bulgaria, **B. Department of Electronics, Technical University of Sofia, Sofia, Bulgaria; ***C. Department of Technology and Management of Communication Systems, Technical University of Sofia, Sofia, Bulgaria ▪ Bionanocomposites based of polylactic acid and silver nanoparticles obtained by solvent evaporation for potential use as biomaterials, 	<p style="text-align: center;">MICROSENSORS AND MICROSYSTEMS 2 <i>Session M&M2: Poster Session</i></p> <p>Chairs: Oana Nedelcu, IMT Bucharest, Romania Viorel Avramescu, IMT Bucharest, Romania</p> <ul style="list-style-type: none"> ▪ Investigation of Structural, Optical and Luminescence Properties of N-doped ZnO Thin Films Deposited by RF Magnetron Sputtering, M. Nicolescu¹, M. Anastasescu¹, J. M. Calderon Moreno¹, S. Preda¹, I. Stanculescu^{2,3}, M. Modreanu⁴, V. Kampylafka⁵, E. Aperathitis⁵, M. Gartner¹, ¹Institute of Physical Chemistry “Ilie Murgulescu”, Romanian Academy, Romania, ²Horia Hulubei National Institute of Research and Development for Physics and Nuclear Engineering, Romania, ³University of Bucharest, Faculty of Chemistry, Department of Physical Chemistry, Romania, ⁴Tyndall National Institute, University College Cork, Cork, Ireland, ⁵FORTH-IESL, Crete, Greece ▪ Waveguide Filters Detuning Enabled by RF MEMS Switches, Y. Fu*, M. G. Banciu**, *The 	<p style="text-align: center;">SEMICONDUCTOR DEVICES AND ICs <i>Session SD&IC: Poster Session</i></p> <p>Chairs: Gheorghe Pristavu, “Politehnica” Univ. of Bucharest, Romania Cornel Stanescu, ON Semiconductor, Romania</p> <ul style="list-style-type: none"> ▪ Worst-Case Input Voltage in Buck, Boost and Buck-Boost Converters, V. Trifa*, Gh. Brezeanu**, E. Ceuca***, *PhD. Student, Politehnica University of Bucharest, Romania, **Department of Applied Electronics, Politehnica University of Bucharest, Romania, ***Department of Applied Electronics, “1 Decembrie 1918” University of Alba Iulia, Romania (STUDENT) ▪ SiC Tools for Reliability Study, T. Phulpin*, A. Jaffre*, J. Alvarez*, M. Lazar**, *GeePs Group of electrical engineering – Paris, CNRS, Centralesupélec, Univ. Paris-Sud, Université Paris-Saclay, Sorbonne université, France Department of Electronics, **ICD/L2n, CNRS, University of Technology of Troyes, France ▪ Homogeneous Resistive Switching in Individual ZnO nanorod p-n Junctions, S.

		BRAN Room	PELES Room	CANTACUZINO Room
		<p>P. Preda^{1*}, M. Rapa², D.E. Mihaiescu³, B. Tincu¹, M. Avram¹, ¹National Institute for Research and Development in Microtechnologies - IMT Bucharest, Romania, ²Faculty of Material Science and Engineering, University Politehnica of Bucharest, Romania, ³Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, Romania</p> <p>▪ Effect of Laser Irradiation on the Refractive Index of the TiO₂ Thin Films, T. Potlog*, E. Dauksta**, K. Murakami**, A. Medvids***, L. Ghimpu****, C. Moise****, H. Mimura*****, *Department of Physics and Engineering, Moldova State University, Chisinau, Moldova, **Graduate school of Science and Technology, Shizuoka University Hamamatsu, Japan, ***Department of Semiconductor Physics, Institute of Technical Physics, Faculty of Materials Science and Applied Chemistry, Riga Technical University, Riga, Latvia, ****Institute of Electronic Engineering and Nanotechnologies, Academy of Sciences of Moldova *****Center for Surface Science and Nanotechnology, of University Polytechnic Bucharest *****Research Institute of Electronics, Shizuoka University, Japan</p> <p>▪ Characterization of NiO Thin Films Fabricated by Magnetron Sputtering, *L. Ghimpu. *V. Suman, **I. Lungu, *Institute of Electronic Engineering and Nanotechnologies, Academy of Sciences of Moldova, Chisinau, Moldova, **Department of Physics and Engineering, Moldova State University, Chisinau, Moldova</p> <p>▪ Effect of Zinc Oxide Concentration on the Dielectric Properties of 3D Printed</p>	<p>University of New South Wales, Sydney, Australia, **National Institute of Materials Physics, Romania</p> <p>▪ A Case Study of 4 GHz Proximity Detector for Smart Crosswalks, C. Andriesei, G. Anitei, D. Condrea, ETTI, "Gheorghe Asachi" Technical University of Iași, Romania</p> <p>▪ Calibration Methodology for a 3D Measurement System of Electromagnetic Radiation, A. Tulbure*, C. Petrascu* and M. Vladescu**, *Department of Engineering, "1 Decembrie 1918" University of Alba Iulia, Romania, **Department of Electronics Technology, "Politehnica" University of Bucharest, Romania</p> <p>▪ Signal Processing Circuit for Spirometry, C. Vasilache, D. Dobrescu, E.Franți, O.G.Profirescu, M. Dascăl*, L.Dobrescu, University POLITEHNICA of Bucharest (STUDENT)</p> <p>▪ Significant Enhancement of Electrical Behavior of SAW Devices on Langasite and Quartz Substrates Obtained by Improvements in Design and Technology, N. Dumbravescu¹, O. Ionescu¹, I. Cernica¹, V. Buiculescu¹, F. Pistritu¹, C. Mitrea², ¹IMT Bucharest, ROMANIA, ²ECONIRV, MINATECH-RO, Bucharest, ROMANIA</p> <p>▪ Interdigitated biosensor for D-serine detection, using gold nano-particles, L. Draghiciu¹, C. Romanitan¹, C. Parvulescu¹, O. Tutunaru¹, R. Müller¹, T. Ignat², ¹National Institute for R&D in Microtechnologies - IMT Bucharest, Romania, ²AGCS - München, Germany</p>	<p>Tiagulskiy*, R. Yatskiv, H. Faitová, J. Vaniš, J. Grym, *Institute of Photonics and Electronics of the Czech Academy of Sciences, Czech Republic</p> <p>▪ Simulation of 30 nm Channel Cylindrical GAA Silicon Tunnel Fets with High-K Gate Dielectrics, M. Kessi, A. Benfedila, A. Lakhelef, L. Belhimer and M. Djouder. The authors are within the Micro and Nanotechnology Research Group (MNRG), Faculty of Electrical Engineering and Computer Sciences, University M. Mammeri, Tizi-Ouzou, Algeria (STUDENT)</p> <p>▪ Experimental and Theoretical Validation of Ga₂O₃ Thin Films Deposited by Physical Vapor Deposition, Khue T. Lai*, Nafiseh Badiie*, Shuo Deng*, Petar Igić**, and Lijie Li*, *College of Engineering, Swansea University Bay Campus, Swansea, UK, **Institute for Future Transport and Cities, Coventry University, Coventry, CV1 5FB, UK</p> <p>▪ Analysis of the current-voltage-temperature Characteristics of W/4H-SiC Schottky Barrier Diodes for High Performance Temperature Sensors, K. Zeghdar*, H. Bencherif*, L. Dehimi***, F. Pezzimenti***, F.G. Della Corte**, *LMSM – Biskra University, Algeria, **Faculty of Material Science, Batna University, Algeria, ***DIIES - Mediterranean University of Reggio Calabria, Italy</p> <p>▪ Replacing Pb with Sb in Halide Perovskite for Field Effect Thin Film Transistors, C. Besleaga*, V. Stancu*, C. Ciobotaru*, S. Polosan*, H. Saidi**, G. Stan*, L. Pintilie*, *National Institute of Materials Physics Romania, **University of Monastir, Laboratoire de la Matière Condensée et des Nanosciences,</p>

		BRAN Room	PELES Room	CANTACUZINO Room
		<p>Acrylonitrile Butadiene Styrene Nanocomposites, A. Maniadi¹, M. Vamvakaki¹, M. Petousis², N. Vidakis², M. Suchea^{3,4*}, M. Sevastaki⁵, Z. Viskadourakis⁵, G. Kenanakis⁵, E. Koudoumas^{4*}, ¹Department of Materials Science and Technology, University of Crete, Voutes, Crete, Greece, ²Mechanical Engineering Department, Hellenic Mediterranean University, Estavromenos, Crete, Greece, ³National Institute for Research and Development in Microtechnologies (IMT Bucharest), Romania, ⁴Institute of Electronic Structure & Laser (IESL), Foundation for Research and Technology (FORTH) Hellas, Heraklion, Greece, ⁵Center of Materials Technology and Photonics, Hellenic Mediterranean University, Estavromenos, Crete, Greece (STUDENT)</p> <p>▪ High Performance NIR Photosensitive Films of Ge nanoparticles in Si₃N₄, I. Stavarache*, P. Prepelita**, I. Lalau*, O. Cojocaru*, V.S. Teodorescu***, M.L. Ciurea***, *National Institute of Materials Physics, 405A Atomistilor Street, Romania, **National Institute for Laser, Plasma and Radiation Physics, Romania, ***Academy of Romanian Scientists, Romania</p> <p>▪ Bulk Nanocrystalline Graphite Thin Films for piezoresistive Sensing Applications, O.-G. Simionescu^{1,2}, E. Anghel^{1,3}, R. Popa¹, C. Pachi¹, R. Gavrila¹, F. Comănescu¹, A. Avram¹, G. Dinescu^{2,4}, ¹National Institute for Research and Development in Microtechnologies, Romania, ²Faculty of Physics, University of Bucharest, Romania, ³Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, Bucharest, Romania, ⁴National Institute for Research and Development Laser,</p>	<p>▪ Vertical graphene Based Biosensor for Biological Fluids Analysis, E. Anghel^{1,2)}, O. Simionescu^{1),3)}, C. Pachi¹⁾, O. Tutunaru¹⁾, C. Mihailescu¹⁾, A. Avram¹⁾, ¹⁾National Institute for Research and Development in Microtechnologies - IMT Bucharest, ROMANIA, ²⁾University Politehnica of Bucharest, Faculty of Applied Chemistry and Materials Science, 7, Gheorghe Polizu Street, Bucharest, ROMANIA, ³⁾University of Bucharest, Faculty of Physics, ROMANIA (STUDENT)</p> <p>▪ Image Processing Technology for Scanning Electron Microscopy, O. Tutunaru, R. Pascu, National Institute for R&D in Microtechnology - IMT Bucharest, Romania</p>	<p>Facultédes Sciences Monastir, Tunisie</p> <p>▪ Robust Pose Estimation Using Time-of-Flight Imaging, C. Oprea, I. Pirnog, I. Marcu, M. Udrea, Department of Telecommunications, Faculty of Electronics, Telecommunications and Information Technology, University Politehnica of Bucharest, Romania</p> <p>▪ Genetic Algorithms for high-Order sliding-Mode Observers, O.Datcu, R. Hobincu, C. Macovei. University POLITEHNICA of Bucharest, Electronics, Telecommunications and Information Technology</p> <p>▪ The adaptive interfaces for easy simulation and design of the converters, E. Ceuca, "1 DECEMBRIE 1918" University of Alba Iulia</p> <p>▪ Analysis and Design of a Current Mode Buck Converter with Digitally Controlled Output Voltage, C.A. Iordache, M. Bodea, Faculty of Electronics, Telecommunications and Information Technology, "Politehnica" University of Bucharest, Romania</p>

		BRAN Room	PELES Room	CANTACUZINO Room
		<p><i>Plasma and Radiation Physics, Romania</i></p> <ul style="list-style-type: none"> ▪ Structural and opto-electrical analysis of Cu doped ZnO thin films by sol-gel method, A.-I. Istrate*, V. Dediu, I. Mihalache, C. Romanitan, O. Tutunaru, CENASIC - Research Centre for integrated systems nanotechnologies and carbon based nanomaterials, National Institute for Research and Development in Microtechnologies - IMT Bucharest, Romania ▪ SnO₂ and Ni Doped SnO₂ /polithiophene Nanocomposites for Gas Sensing Applications, P. Pascariu¹, I.V. Tudose^{2,3}, D. Vernardou², E. Koudoumas², O.N. Ionescu⁴, M. Sucea^{2,4}, ¹"Petru Poni" Institute of Macromolecular Chemistry, Romania, ²Center of Materials Technology and Photonics, Hellenic Mediterranean University, Estavromenos, Crete, Greece, ³Chemistry Department, University of Crete, Crete, Greece, ⁴National Institute for Research and Development in Microtechnologies (IMT Bucharest), Romania ▪ Epoxy Nanocomposites Based on MWCNT, Costel Păun, Cosmin Obreja, Florin Comănescu, Vasilica Tucureanu, Oana Tutunaru, Cosmin Romanițan, Octavian Ionescu, National Institute for Research and Development in Microtechnologies (IMT Bucharest) 		
	20:30	CAS 2019 Banquet - New Montana Hotel Restaurant		