

CAS 2023 PROGRAM

46th Edition
October 11-13, 2023,
Sinaia, ROMANIA



INTERNATIONAL SEMICONDUCTOR CONFERENCE

organized by
National Institute for Research and
Development in Microtechnologies -
IMT Bucharest



co-sponsored by
IEEE - Electron Devices Society



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FOREWORD

About the Conference

The International Semiconductor Conference (CAS) organized by the National Institute for Research and Development in Microtechnologies - IMT Bucharest is now at its 46th edition. The conference is a yearly event organized since 1978. In 1991, CAS became an International Conference and starting in 1995, the conference became an **IEEE (Institute of Electrical and Electronic Engineers) event** sponsored by the IEEE EDS (Electron Devices Society).

The CAS Conference has been for years devoted to physics, design, technology and applications of semiconductor devices and materials, including integrated circuits. Since 1997, the Conference profile has been gradually extended to micro- and nano-technologies, including micro- and nanoelectronics, micro- and nanosystems, also nanostructures and nanostructured materials.

In 2023 the CAS conference will take place in Sinaia, Romania, from Oct. 11 to Oct. 13, 2023.

The technical program includes three plenary sessions with 10 invited lectures, as well as oral and poster sessions comprising 91 regular papers.

CAS 2023 is co-located with the 2023 International Conference on Analog VLSI Circuits - AVIC 2023.

Social Programme

The main social events of CAS 2023 (included for all registered participants):

- CAS 2023 “Get-together” Cocktail - Tuesday, Oct. 10, 20:00 h
- Trip to Cantacuzino Castle, Busteni - Thursday, October 12, 14:15 h
- CAS 2023 Banquet including the Best Paper Awards ceremony - Friday, October 13, 20:30 h

On behalf of the Organizing Committee of the International Semiconductor Conference (CAS), we are pleased to welcome you to the 46th edition - CAS 2023 and wish you a fruitful and enjoyable time at the conference and in Sinaia!

15th of September 2023

Miron Adrian DINESCU

Conference Chairman

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A. Müller	- IMT Bucharest, Romania
R. Müller	- IMT Bucharest, Romania
D. Neculoiu	- IMT Bucharest, Romania

GENERAL INFORMATION

VENUE AND DATES

The conference will take place from **Wednesday, October 11 to Friday, October 13, 2023, at Hotel Sinaia, Sinaia, Romania.**

Sinaia is a beautiful mountain resort located in the Carpathian Mountains, at 125 Km (by car or by train) from Bucharest. The weather in Sinaia is mild and sunny in October, the average temperature being about 10°C.

TECHNICAL PROGRAM

English is the official language of the Conference.

In the oral sessions, the authors should use PowerPoint type presentations. The presentations should not exceed **20 minutes for contributed papers**, respectively **30 minutes for invited papers**, with 5 minutes for discussions included.

2 poster sessions are scheduled, on **October 11 and October 13**. The posters format should be A0 size. The poster panel will be marked with the corresponding code from the conference programme: Ex. AB.1 (AB=session code, 1=poster 1).

CAS 2023 is co-located with the 2023 International Conference on Analog VLSI Circuits - AVIC 2023.

Conference SECRETARIAT

The CAS 2023 Secretariat will be opened on Tuesday, October 11, from 15:00 to 18:00, and daily from 08:30 to 13:00 and from 14:00 to 18:00, during the conference.

SOCIAL EVENTS

CAS 2023 WELCOME COCKTAIL

CAS 2023 “Get-together” Cocktail will be held on Tuesday, October 10, 20:00 h, in Hotel Sinaia Restaurant.

A trip to Cantacuzino Castel in Busteni is scheduled on Thursday, October 12, starting 14:15 h.

CAS 2023 BANQUET

The Conference Banquet, including the Best papers Awards ceremony, will be held on Friday, October 13, 20:30 h, in Hotel Sinaia Restaurant.

For the registered participants and accompanying persons, the costs of all social events are included in the Conference Fee.

TOURISM and ENTERTAINMENT OPPORTUNITIES

The small town of Sinaia, with its famous Peles Castle, formerly the Summer Royal Residence, is a well-known mountain resort in Romania. Sinaia, the so-called "Pearl of Carpathians" (Bucegi chain, with 2500 meters highest altitude) is situated in the Prahova valley and it is the favourite place outside Bucharest for international conferences and high-level meetings.

By foot, by car, by bus or by using cable transportation you can reach very interesting places. One can go to the Peles Royal Castle, from the XIX century, which is the most visited museum in Romania, and to other places of cultural and historical interest, like Pelisor Castle, George Enescu Museum, Sinaia Monastery. The rocky landscape of the Prahova valley is a paradise for mountain climbers.

You may reach the height of 2000 meters by cable car or by car and enjoy a walk, without any special equipment.

A few kilometres North from Sinaia, the Cantacuzino Castle, situated in the district of Zamora, town of Busteni, is open for visit. The castle is surrounded by waterfalls, caves and fountains and is in top castles in Romania in terms of architecture.

The Bran Castle, from the XIV century, recently related to the famous "Dracula", may be visited in a few hours trip.

A number of hotels and restaurants are providing excellent food and entertainment.

Mountain trips near Sinaia

A number of chalets in the Bucegi Mountains may be reached **by car** (Cota 1,400 - elevation 1,400 m, Cuibul Dorului - 2,100 m, Poiana Stanii - 1,300 m etc.).

In other cases, it is a better idea to go **by cabin**: you may take the cabin from Hotel Silva in Busteni (10Km North of Sinaia, by bus, or minibus) and you will reach immediately Babele (the Old Ladies rocks) - 2,206 m, from there you may take (for about two hours) the footpath to Omu - 2,505 m, the highest peak and chalet in the region. An easiest trip from the Babele chalet is to go South, following the footpath to Piatra Arsa - 1,950 m, and then to the cabin station Cota 2,000. The same point may be reached by using another cabin (in two steps), from the centre of Sinaia (behind the New Montana Hotel) - Sinaia - Cota 1,400 and Cota 1,400 - Cota 2,000.

Museums and Entertainment in Sinaia

- **Peles Castle Museum** within a walking distance (15-20 minutes) from Sinaia Hotel. Visiting hours: Wednesday: 10:00-17:00; Thursday-Sunday: 09:15-17:00; Monday-Tuesday: closed.
- **Sinaia Monastery** (giving the name of the entire town) is also close to the New Montana Hotel.
- **Sinaia Casino Palace** situated in the Central Park of Sinaia
- A wide range of trips (by car or by train) on the Prahova Valley, from Sinaia to Poiana Tapului, Busteni, Azuga, Predeal and beyond (Brasov and Poiana Brasov).

CAS 2023 International Semiconductor Conference

PROGRAM

10 Oct. Tuesday	15:00-18:00	Registration
	20:00	Welcome Cocktail CAS 2023 (Hotel Sinaia Restaurant)

11 Oct. Wednesday	08:00-08:50	Registration
		Room 1
	08:50-09:10	Welcome to CAS 2023 and AVIC 2023 Mircea Dragoman , IMT Bucharest, Romania – CAS 2023 Technical Programme Chair Pat Cunneen , Analog Devices, Ireland

11 Oct. Wednesday		Room 1
	09:10-11:10	Plenary Session 1 (<i>Invited Papers</i>) Chair: Gh. Brezeanu, Romania M. A. Dinescu, Romania Philipp Pirro, Technical Univ. Kaiserslautern, Germany Dominique Planson, Institut National des Sciences Appliquées de Lyon INSA Lyon, France Cristian E. Simion, National Institute of Materials Physics, Romania Mircea Dragoman, National Institute for Research and Development in Microtechnologies - IMT Bucharest, Romania
	11:10-11:30	<i>Coffee break</i>

11 Oct. Wednesday		Room 1	Room 2
	11:30-12:50	NANOSCIENCE & NANOENGINEERING 1 <i>Oral presentations</i> Chair: M. Dragoman, Romania R. Sporea, UK	SEMICONDUCTOR DEVICES – Student papers <i>Oral presentations</i> Chair: M. Brezeanu, Romania D. Dobrescu, Romania
	12:50-13:00	PHOTO “REMEMBER CAS 2023”	
	13:00-14:00	<i>Lunch</i>	
	14:00-15:40	MICROSENSORS & MICROSYSTEMS <i>Oral presentations</i> Chair: S. Cotofana, The Netherlands C. Obreja, IMT Bucharest, Romania	INTEGRATED CIRCUITS – Student papers <i>Oral presentations</i> Chair: V. Anghel, Romania C. Dan, Romania

	15:40 -16:00	<i>Coffee break</i>		
		Room 1 & Room 2		
	16:00-18:30	MICROPHOTONICS & MICROWAVES <i>Poster Session 1</i> Chair: M. Aldrigo, Romania R. Tomescu, Romania	MICROSENSORS & DEVICES <i>Poster Session 2</i> Chair: A. Baracu, Romania A. Bunea, Romania	INTEGRATED CIRCUITS, MODELLING & MICROSENSORS - Student papers - Poster Session 3 Chair: R. Pascu, Romania Gh. Pristavu, Romania
	16:30–18:00	Room 3		
		Round Table THE MICROELECTRONICS ECOSYSTEM IN ROMANIA – CURRENT STATUS, CHALLENGES, AND PERSPECTIVES Chair: O. Buiu , IMT Bucharest, Romania M. Brezeanu , PwC Romania		

12 Oct. Thursday		Room 1
	09:00-10:30	Plenary Session 2 (<i>Invited Papers</i>) Chair: R. Müller, Romania P. Pirro, Germany Radu Sporea , Univ. of Surrey, United Kingdom Sorin Cotofana , Delft Univ. of Technology, The Netherlands Cosmin Moisa , Continental Automotive Romania
	10:30-11:00	Elena Arbelo , Park Systems, Germany
	11:00-11:10	Launch of the Networking Centre for Excellence in Nanoelectronics for environment monitoring , Carmen Moldovan , IMT Bucharest, Romania
	11:10-11:20	<i>Coffee break</i>

12 Oct. Thursday		Room 1	Room 2
	11:20-13:00	NANOSCIENCE & NANOENGINEERING 2 <i>Oral presentations</i> Chair: M.L. Ciurea, Romania C.E. Simion, Romania	NANOSCIENCE, NANOPHOTONICS & MODELLING – Student papers <i>Oral presentations</i> Chair: F. Draghici, Romania A. Tulbure, Romania
	13:00-14:00	<i>Lunch</i>	
	14:15-18:00	Trip to Cantacuzino Castle, Busteni	

13 Oct. Friday		Room 1	
	09:00-10:30	Plenary Session 3 (<i>Invited Papers</i>) Chair: O. Buiu, IMT Bucharest, Romania A. Müller, IMT Bucharest, Romania Igor A. Lukyanchuk , Univ. de Picardie Jules Verne, France Mihai Lazar , Univ. of Technology of Troyes (UTT) & CNRS, France Mircea Modreanu , Tyndall National Institute, Univ. College Cork, Ireland	
	10:30-10:50	<i>Coffee break</i>	
		Room 1	Room 2
	10:50-12:50	MICROPHOTONICS & MICROWAVES <i>Oral presentations</i> Chair: D. Cristea, Romania M. Lazar, France	NANOSCIENCE & MICROSENSORS <i>Oral presentations</i> Chair: C. Kusko, Romania V. Teodorescu, Romania
	13:00-14:00	<i>Lunch</i>	

13 Oct. Friday		Room 1	Room 2
	14:00-15:40	MODELLING & SEMICONDUCTOR DEVICES <i>Oral presentations</i> Chair: L. Dobrescu, Romania D. Neculoiu, Romania	EMERGING FUNCTIONAL PHASE- CHANGE MATERIALS FOR PLASMONIC, PHOTONIC AND MICROELECTRONIC APPLICATIONS - I Chair: M. Losurdo, Italy M. Modreanu, Ireland
	15:40-15:50	<i>Coffee break</i>	
	15:50-17:10	INTEGRATED CIRCUITS <i>Oral presentations</i> Chair: S. Marinca, Romania M. Neag, Romania	EMERGING FUNCTIONAL PHASE- CHANGE MATERIALS FOR PLASMONIC, PHOTONIC AND MICROELECTRONIC APPLICATIONS - II Chair: M. Losurdo, Italy M. Modreanu, Ireland
	17:10 -17:30	<i>Coffee break</i>	

13 Oct. Friday		Room 1 + 2
	17:30-19:00	NANOSCIENCE & NANOENGINEERING <i>Poster Session 4</i> Chair: A. M. Lepadatu, Romania C. Romanitan, Romania
	20:30	CAS 2023 Banquet including Best Paper Awards ceremony (Hotel Sinaia Restaurant)

Tuesday, October 10, 15:00 - 18:00

CAS Secretariat

Registration and Conference Materials Distribution

20:00 – Welcome Cocktail

Wednesday, October 11, 08:50

Room 1

Opening session CAS 2023 and AVIC 2023

WELCOME TO CAS 2023, **M. Dragoman**, IMT Bucharest, Romania

WELCOME TO AVIC 2023, **Pat Cunneen**, Analog Devices, Ireland

PLENARY SESSION 1 (Invited Papers)

Session: PS1. Oral presentations

Chair: **Gh. Brezeanu**, Univ. POLITEHNICA of Bucharest, Romania

M. A. Dinescu, IMT Bucharest, Romania

PS1.1 MAGNON SPINTRONICS - PROCESSING DATA
09:10 WITH SPIN WAVES, **P. Pirro**, Technical Univ. Kaiserslautern, Germany

PS1.2 EMERGING TRENDS IN OBIC
09:40 CHARACTERIZATION TECHNIQUE FOR WIDE BANDGAP SEMICONDUCTOR DEVICES, **D. Planson, C. Sonnevile, P. Bevilacqua, D. Tournier**, Univ. Lyon, INSA Lyon, Ecole Centrale de Lyon, Univ. Claude Bernard Lyon 1, CNRS, France

PS1.3 THE ROLE OF INTERDIGITAL ELECTRODES ON
10:10 SENSING PERFORMANCES WITH P-TYPE NiO-BASED GAS SENSORS - LINK TO EXPERIMENTS, **C.E. Simion, I.V. Dinu, O.G. Florea, A. Stanoiu**, National Institute of Materials Physics, Romania

PS1.4 PERSPECTIVES OF ELECTRONICS AT ATOMIC
10:40 SCALE, **M. Dragoman***, **A. Dinescu***, **D. Dragoman**,****, *IMT Bucharest, **Univ. of Bucharest, Faculty of Physics, ***Academy of Romanian Scientists, Romania

11:10-11:30 – Coffee break

Wednesday, October 11, 11:30
Room 1

**NANOSCIENCE &
NANOENGINEERING 1**
Session: N&N1. Oral presentations

Chair: **M. Dragoman**, IMT Bucharest, Romania
R. Sporea, Univ. of Surrey, UK

- N&N1.1** ON THE SYNTHESIS AND CHARACTERIZATION
11:30 OF BIO-ENTITIES BASED ON ALBUMIN
NANOPARTICLES AND BIOMIMETIC CELL
MEMBRANE, **S. Iftimie¹, M.-E. Barbinta-Patrascu¹,
N. Cazacu¹, A. Costas², A. E. Balan¹,
C. G. Chilom¹**, ¹Univ. of Bucharest, Faculty of Physics,
²National Institute of Materials Physics, Romania
- N&N1.2** VAPOR TRANSPORT GROWTH OF LOCALIZED
11:50 ATOMICALLY THIN 2D MoS₂ LAYERS,
**I. Stavarache¹, C. Palade¹, A. Slav¹, I. Dascalescu¹,
A.-M. Lepadatu¹, E. Matei¹, M. L. Ciurea^{1,2},
T. Stoica¹**, ¹National Institute of Materials Physics,
²Academy of Romanian Scientists, Romania
- N&N1.3** SYNTHESIS OF VANADIUM DIOXIDE BY
12:10 PULSED LASER DEPOSITION USING A ONE-STEP
PROCESS, **C. Romanitan*, J. Manuel Caicedo**,
I. Mihalache*, J. Padilla-Pantoja**, R. Gavrilă*,**
***IMT Bucharest, Romania, **Catalan Institute of
Nanoscience and Nanotechnology, ICN2, CSIC and The
Barcelona Institute of Science and Technology, Spain**
- N&N1.4** SWIR EXTENDED PHOTOCONDUCTIVITY IN A
12:30 HYDROGENATED GeSn FILMS, **I. Dascalescu¹,
A. Slav¹, C. Palade¹, G. A. Lungu¹, A.M. Lepadatu¹,
V. S. Teodorescu^{1,2}, M. Braic³, M.L. Ciurea^{1,2},
T. Stoica¹**, ¹National Institute of Materials Physics,
²Academy of Romanian Scientists, ³National Institute
for R&D in Optoelectronics INOE 2000, Romania

12:50-13:00 – PHOTO “REMEMBER CAS 2023”

13:00-14:00 – Lunch

Wednesday, October 11, 11:30
Room 2

SEMICONDUCTOR DEVICES –
Student papers
Session: SD-S. *Oral presentations*

Chair: **M. Brezeanu**, PwC Romania

D. Dobrescu, Univ. POLITEHNICA of Bucharest,
Romania

SD-S.1 3D TACD MODELLING OF MULTI-CHANNEL TRI-
11:30 GATE NORMALLY-OFF AlGaIn/GaN MOSHEMTs,
Q. He*, **H. Wang****, **F. Udrea***, *Dept. of
Engineering, Univ. of Cambridge, UK, **College of
Electrical Engineering, Zhejiang Univ., China

SD-S.2 THRESHOLD VOLTAGE MODELING OF CARBON
11:50 NANOTUBE FIELD-EFFECT TRANSISTOR
(CNTFET), **S. M. Shakil**, **M. Ullah**, Florida
Polytechnic Univ, USA

SD-S.3 BROADBAND OPTOELECTRONIC PROPERTIES
12:10 OF p-CuCrO₂/n-Si HETEROJUNCTION PREPARED
BY PULSED LASER DEPOSITION, **D. Zala***,
U. Joshi**, **A. Ray***, *School of Technology, Pandit
Deendayal Energy Univ., **Univ. School of Sciences,
Gujarat Univ., India

SD-S.4 DESIGN AND INVESTIGATION OF A CHARGE
12:30 PLASMA-BASED DOPINGLESS CYLINDRICAL
NW SCFET FOR SUB-10 NM, **V. Sandeep***, **J. C.**
Pravin*, **S. Ashok Kumar****, *Dept. of ECE,
Kalasalingam Academy of Research and Education,
**Dept. of ECE, Sri Manakula Vinayagar Engineering
College, India

12:50-13:00 – PHOTO “REMEMBER CAS 2023”

13:00-14:00 – Lunch

Wednesday, October 11, 14:00
Room 1

**MICROSENSORS &
MICROSYSTEMS**
Session: M&Ms. *Oral presentations*

Chair: **S. Cotofana**, Delft Univ. of Technology,
Netherlands
C. Obreja, IMT Bucharest, Romania

M&Ms.1 GHGs DETECTION BY TUNING THE OPERATING
14:00 TEMPERATURE OF $\text{Sn}_{1-x}\text{Gd}_x\text{O}_{(4-x)/2}$, **A. Stanoiu,**
D. Ghica, C. G. Mihalcea, I. D. Vlaicu, O. G. Florea,
S. Bulat, C. Ghica, C. E. Simion, National Institute of
Materials Physics, Romania

M&Ms.2 ENABLING HIGH SELECTIVITY IN
14:20 ELECTROCHEMICAL SENSING FOR
AGRICULTURAL APPLICATIONS THROUGH
THE INTEGRATION OF MICROFABRICATED
DEVICES WITH ARTIFICIAL RECOGNITION
ELEMENTS, **L.A. Dinu*, A.M. Baracu*,**
E.I. Geană, O. Brîncoveanu*, P. Vărășteanu*,**
C. Pârvulescu*, *IMT Bucharest, **National Institute
for R&D for Isotopic and Cryogenic Technologies,
Romania

M&Ms.3 QUATERNARY OXIDIZED CARBON
14:40 NANOHORNS - BASED NANOHYBRID AS
SENSING LAYER FOR ROOM TEMPERATURE
RESISTIVE ETHANOL SENSING, **B.-C. Serban^{1*},**
N. Dumbravescu¹, O. Buiu¹, M. Bumbac^{2,3},
M. Brezeanu⁴, C. Cobianu⁵, R. Marinescu¹,
C. Pachiu¹, V. Avramescu¹, C.-M. Nicolescu³,
F. Comanescu¹, ¹IMT Bucharest, ²Faculty of Sciences
and Arts, Valahia Univ. of Targoviste, ³Institute of
Multidisciplinary Research for Science Technology,
Valahia Univ. of Targoviste, ⁴Univ. POLITEHNICA of
Bucharest, ⁵NANOM MEMS SRL, Romania

- M&Ms.4** ELECTROCHEMICAL IMPEDANCE
15:00 SPECTROSCOPY OF THE SELF-POWERED
FLEXIBLE WEARABLE HUMAN RESPIRATION
DETECTOR, **M. V. Bošković, K. Cvetanović,**
E. Milinković, J. N. Stevanović, M. Sarajlić, Institute
of Chemistry, Technology and Metallurgy, Univ. of
Belgrade, Serbia
- M&Ms.5** OXIDIZED CARBON NANOHORNS/KCl/ PVP
15:20 NANOHYBRID AS SENSING LAYER FOR
CHEMIREISTIVE HUMIDITY SENSOR,
B.-C. Serban^{1*}, N. Dumbravescu¹, O. Bui¹,
M. Bumbac^{2,3}, M. Brezeanu⁴, C. Cobianu⁵,
R. Marinescu¹, C. Pachiu¹, V. Avramescu¹,
C.-M. Nicolescu³, ¹IMT Bucharest, ²Faculty of
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³Institute of Multidisciplinary Research for Science
Technology, Valahia Univ. of Targoviste, Romania,
⁴Univ. POLITEHNICA of Bucharest, ⁵NANOM
MEMS SRL, Romania

15:40-16:00 – Coffee break

Wednesday, October 11, 14:00
Room 2

INTEGRATED CIRCUITS –
Student Papers
Session: IC-S. *Oral presentations*

Chair: **V. Anghel**, ON Semiconductor, Romania
C. Dan, Univ. POLITEHNICA of Bucharest,
Romania

- IC-S.1** DIGITAL DUAL MODE CONTROL VCM-BURST
14:00 OF DC-DC BUCK CONVERTER OPERATING
OVER WIDE RANGES OF INPUT VOLTAGES AND
LOAD CURRENTS, **E. Vladu***, **N. Braic***,
P. Martari*, **M. Neag***, **V. Moleavin****, *Technical
Univ. of Cluj-Napoca, Romania, **Infineon
Technologies Romania
- IC-S.2** COMPARISON OF THREE OVERCURRENT
14:20 PROTECTION CIRCUITS FOR LDOs,
E.-A. Marian*, **M.-D. Farcaș****, **R.-C. Oneț***,
*Technical Univ. of Cluj-Napoca, Romania, **Infineon
Technologies Romania
- IC-S.3** DESIGN AND VERIFICATION OF A HIGH
14:40 FREQUENCY, SPI CONTROL BLOCK,
I.-B. Brezeanu*,**, **S. Isari***, **A. Vasile****,
Gh. Brezeanu**, *onsemi Romania, **Univ.
POLITEHNICA of Bucharest, Romania
- IC-S.4** 8-BIT CONTROLLER FOR A DEM-BASED INAMP,
15:00 **A. Calinescu**, **M. Enachescu**, Faculty of Electronics,
Telecommunications and Information Technology,
Univ. POLITEHNICA of Bucharest, Romania
- IC-S.5** A SUPER CLASS AB OTA WITH HIGH SLEW-
15:20 RATE FOR AUTOMOTIVE LDOS, **A. Battigelli***,
R. Oneț*, **M. Neag***, **C. S. Pleșa****, *Technical Univ.
of Cluj-Napoca, **Infineon Technologies, Romania

15:40-16:00 – Coffee break

Wednesday, October 11, 16:00
Room 1 & Room 2

**MICROPHOTONICS &
MICROWAVES**
Session: P1. Poster Session

Chair: **M. Aldrigo**, IMT Bucharest, Romania
R. Tomescu, IMT Bucharest, Romania

- P1.1** OPTIMIZATION OF PEROVSKITE SOLAR CELLS, **I.-A. Vlad, A. Drăgulescu, M. Vlădescu**, Univ. POLITEHNICA of Bucharest, Romania
- P1.2** PEROVSKITE AND CIGS SOLAR CELLS FOR ENERGY HARVESTING: DESIGN, SIMULATION AND COMPARISON, **A. M. Abbas Al Gburi, A. Drăgulescu**, Univ. POLITEHNICA of Bucharest, Romania
- P1.3** ORGANIC AND a-Si SOLAR CELLS FOR ENERGY HARVESTING, **A. M. Abbas Al Gburi, A. Drăgulescu**, Univ. POLITEHNICA of Bucharest, Romania
- P1.4** EFFECTS OF THE MICRO-PATTERNED SUBSTRATE ON THE PROPERTIES OF THIN FILMS BASED ON DIFFERENT ORGANIC BLENDS DEPOSITED BY MAPLE FOR PHOTOVOLTAIC APPLICATIONS, **O. Rasoga^{1*}, C. Thanner², C. Breazu¹, G. Petre¹, M. Socol¹, G. Popescu-Pelin³, S. Iftimie⁴, A. Stanculescu¹**,
¹National Institute of Materials Physics, Romania, ²EVGroup, Austria, ³Faculty of Physics, Univ. of Bucharest, ⁴National Institute for Lasers, Plasma and Radiation Physics, Romania
- P1.5** NUMERICAL ANALYSIS OF INTENSITY BASED SPR SENSORS, **M. Kusko, R. Tomescu, G. A. Bulzan**, IMT Bucharest, Romania
- P1.6** NUMERICAL INVESTIGATIONS OF A THREE COUPLED NON-HERMITIAN OPTICAL WAVEGUIDES, **G. A. Bulzan^{1,2}, C. Kusko¹, M. Kusko¹**, ¹IMT Bucharest, ²Faculty of Physics, Univ. of Bucharest, Romania

- P1.7** MULTIBAND METASURFACE-BASED ANTENNAS WITH IMPROVED RADIATION CHARACTERISTICS IN THE X BAND, **A. Cismaru, M. Aldrigo, M. Dragoman, S. Iordanescu, D. Mladenovic, C. Parvulescu**, IMT Bucharest, Romania

**MICROSENSORS &
DEVICES**
Session: P2. Poster Session

Chair: **A. Baracu**, IMT Bucharest, Romania
A. Bunea, IMT Bucharest, Romania

- P2.1** ENGINEERED MICROTOPOGRAPHY ON PDMS SURFACE FOR NONTOXIC COATINGS TO MARINE BIO-FOULING PREVENTION, **E. Manea, C. Parvulescu, A. Avram, A. Dinescu, M. Purica**, IMT Bucharest, Romania
- P2.2** ELECTRICAL TESTS FOR ACETYLCHOLINESTERASE AND ACTIVATION WITH CD3 (ANTIGEN) AND ANTI-CD3 (ANTIBODY) WITH PROTEINS, **L. Draghiciu, S. Mihaila, C. Parvulescu, A. Albu**, IMT Bucharest, Romania
- P2.3** SMART ENTRANCE MAT, **C. O. Opris, A. Drăgulescu**, Univ. POLITEHNICA of Bucharest, Romania
- P2.4** CYCLING TESTING METHODOLOGY FOR PEDOT: PSS RH SENSORS, USING DIFFERENT BINDERS, **N. Dumbravescu, O. Buiu, B.-C. Serban, R. Marinescu, C. Pachiu**, IMT Bucharest, Romania
- P2.5** A SIMPLIFIED DIELECTROPHORETIC DEVICE FOR PARTICLE MANIPULATION AND SEPARATION, **E. Chiriac*, C. Voîţincu*, M. Avram*, C. Bălan****, *IMT Bucharest, **Univ. POLITEHNICA of Bucharest
- P2.6** HARDWARE EMBEDDED ENCRYPTION SYSTEM BASED ON PROGRAMMABLE CELLULAR AUTOMATA, **G. C. Stănică, P. Anghelescu, Ş. O. Stănică**, National Univ. of Science and Technology POLITEHNICA Bucharest – University Center Pitesti

- P2.7** THE STRUCTURE OF ELECTRIC CURRENT ACROSS A FTJ AT ROOM TEMPERATURE, **T. Sandu**, IMT Bucharest, Romania
- P2.8** AN ELEGANTLY SIMPLE APPROACH FOR WAFER FEATURE EXTRACTION AND DEFECT PATTERN RECOGNITION, **N. Shukla**, Chennai Mathematical Institute, India

INTEGRATED CIRCUITS, MODELLING & MICROSENSORS - Student Papers
Session: P3. Poster Session

Chair: **R. Pascu**, IMT Bucharest, Romania

Gh. Pristavu, Univ. POLITEHNICA of Bucharest, Romania

- P3.1** ADVANCED MORPHOLOGIC AND STRUCTURAL CHARACTERIZATION OF SINGLE FIBERS PVDF/TiO₂/GNP NANOCOMPOSITE MATERIALS FABRICATE BY ELECTROSPINNING FOR MICRO/NANOELECTRONICS APPLICATIONS, **A. G. M. Popescu^{1,*}**, **P. Pascariu¹**, **S. Mihaila¹**, **R. Gavrilă¹**, **M. Popescu¹**, **C. Pachiū¹**, **C. Romanitan¹**, **M. P. Sucheă^{1,2,*}**, **E. Koudoumas^{1,2}**, ¹IMT Bucharest, Romania, ²Center of Materials Technology and Photonics, Hellenic Mediterranean Univ., Greece
- P3.2** RAPID MANUFACTURING OF FLEXIBLE MICROSTRUCTURED PDMS SUBSTRATES, USING 3D DLP PRINTING TECHNIQUE, FOR FLEXIBLE PRESSURE SENSORS, **F. Pistritu^{1,2}**, **M. Carp¹**, **V. Dediu¹**, **C. Parvulescu¹**, **M. Vladescu²**, **P. Schiopu²**, ¹IMT Bucharest, Romania, ²Univ. POLITEHNICA of Bucharest, Romania
- P3.3** SEMI-AUTONOMOUS ROBOT FOR EXPLORATION, MAPPING AND AIR QUALITY MONITORING, **A.-M. Curea**, **A. M. Antonescu**, Univ. POLITEHNICA of Bucharest
- P3.4** OVER/UNDER VOLTAGE AND THERMAL SHUTDOWN PROTECTIONS FOR LDOs USED IN PMICS: DESIGN TECHNIQUES, **S.-A. Parfenov***, **R. Onet***, **G. Simeon****, *Technical Univ. of Cluj-Napoca, **Infineon Technologies, Romania

- P3.5** A SOURCE-GATED TRANSISTOR EMPIRICAL COMPACT MODEL WITH SOURCE REGION EMPHASIS DESIGNED USING A TCAD SIMULATION, **P. Golec***, **E. Bestelink***, **B. Iñiguez****, **R. Sporea***, *Advanced Technology Institute, School of Computer Science and Electronic Engineering, Univ. of Surrey, UK, **Dept. of Electronic Engineering, Univ. Rovira i Virgili, Spain
- P3.6** MODELLING INTEGRATED CIRCUITS BEHAVIOR USING AN ACTIVE LEARNING APPROACH BASED ON GAUSSIAN PROCESS REGRESSION, **V. Grosu¹**, **E. David²**, **L. Goras³**, **G. Pelz⁴**, ¹Gh. Asachi” Technical Univ., Iasi, Romania, ²Infineon Technologies Bucharest, Romania, ³“Gheorghe Asachi” Technical Univ. Iasi, Romania, Institute of Computer Science, Romanian Academy, Iasi Branch, ⁴Infineon Technologies, Germany
- P3.7** SIMULATION MODEL FOR BRUSHLESS DC MOTOR LOADS CONTROLLING, **L. A. Gheorghe**, **C. L. Gogu**, **R. C. Cavache**, **L. Dobrescu**, **D. Dobrescu**, Univ. POLITEHNICA of Bucharest

Wednesday, October 11, 16:30 - 18:00
Room 3

**Round Table THE MICROELECTRONICS
ECOSYSTEM IN ROMANIA –
CURRENT STATUS, CHALLENGES,
AND PERSPECTIVES**

Chair: **O. Buiu**, IMT Bucharest, Romania
M. Brezeanu, PwC Romania

Members of the broader community from Academia, RTOs, Industry, Finance, and funding bodies will discuss the current challenges and opportunities in this national, European and global interest field, a key enabler for the development of future technologies.

Thursday, October 12, 09:00
Room 1

PLENARY SESSION 2 (Invited Papers)
Session: PS2. *Oral presentations*

Chair: **R. Müller**, IMT Bucharest, Romania

P. Pirro, Technical Univ. Kaiserslautern, Germany

PS2.1 NEW INSIGHTS INTO THE DESIGN OF
09:00 CONTACT-CONTROLLED THIN-FILM
TRANSISTORS, **R. Sporea**, Univ. of Surrey, UK

PS2.2 SPIN WAVE BASED THRESHOLD LOGIC,
09:30 **S. Cotofana**, Delft Univ. of Technology, The
Netherlands

PS2.3 REVIVING THE MICROELECTRONICS
10:00 ECOSYSTEM IN ROMANIA FOR EU UNDER
IPCEI ME/CT, **C. Moisa**, Continental Automotive
Romania

10:30 ENHANCING YOUR NANOSCALE
SEMICONDUCTOR METROLOGY WITH PARK
SYSTEMS AFMs, **E. Arbelo**, Park Systems, Germany

11:00 LAUNCH OF THE NETWORKING CENTRE FOR
EXCELLENCE IN NANO-ELECTRONICS FOR
ENVIRONMENT MONITORING, **C. Moldovan**, IMT
Bucharest

11:10-11:20 – Coffee break

Thursday, October 12, 11:20
Room 1

**NANOSCIENCE &
NANOENGINEERING 2**
Session: N&N2. Oral presentations

Chair: **M. L. Ciurea**, National Institute of Materials
Physics, Romania
C. E. Simion, National Institute of Materials
Physics, Romania

N&N2.1 TERNARY HOLEY CARBON-BASED
11:20 NANOHYBRID FOR RESISTIVE RELATIVE
HUMIDITY SENSOR, **B.-C. Serban^{1*},**
N. Dumbravescu¹, O. Buiu¹, M. Bumbac^{2,3},
M. Brezeanu⁴, C. Cobianu⁵, R. Marinescu¹,
C. Pachiu¹, V. Avramescu¹, C.-M. Nicolescu³, ¹IMT
Bucharest, ²Faculty of Sciences and Arts, Valahia Univ.
of Targoviste, ³Institute of Multidisciplinary Research
for Science Technology, Valahia Univ. of Targoviste,
⁴Univ. POLITEHNICA of Bucharest, ⁵NANOM MEMS
SRL, Romania

N&N2.2 NEAR INFRA-RED TUNABLE EMBEDDED
11:40 METALENSES FOR PLASTIC DETECTION,
O. Rasoga^{1*}, M. C. Bunea^{1*}, C. A. Dirdal²,
A. Dinescu³, M. A. Avram³, A. M. Baracu³,
I. Stavarache¹, M. Socol¹, A. Stanculescu¹, ¹National
Institute of Materials Physics, Romania, ²SINTEF
Microsystems and Nanotechnology, Norway, ³IMT
Bucharest, Romania

N&N2.3 SELF-CLEANING SURFACES BASED ON TiO₂ – g-
12:00 C₃N₄ COMPOSITES, **S. Gheorghita, C. Bogatu,**
A. Duta, Transilvania Univ. of Brasov, Romania

N&N2.4 DEEP EUTECTIC SOLVENTS AND
12:20 ELECTRONICS: ELECTRODEPOSITION OF Sn-Cu-
Ni ALLOY, **S. State^{*,**}, S. Costovici^{**}, L. Anicai^{**},**
M. Enachescu^{}, T. Visan^{**},** ^{*}IMT Bucharest,
Romania, ^{**}Center of Surface Science and
Nanotechnology, Univ. POLITEHNICA of Bucharest,
Romania

N&N2.5 NOVEL ZnO:RE/GRAPHENE NANOCOMPOSITE
12:40 WITH ENHANCED ELECTRICAL AND
DIELECTRIC PROPERTIES, **P. Pascariu**^{1,2,3},
C. Pachi¹, **C. Romanitan**¹, **O. N. Ionescu**¹,
T. Sandu¹, **M. Gologanu**¹, **I. V. Tudose**^{3,5},
M. Suche^{1,3*}, **E. Koudoumas**^{1, 3, 4*}, ¹IMT Bucharest,
Romania, ²“Petru Poni” Institute of Macromolecular
Chemistry, Romania, ³Center of Materials Technology
and Photonics, School of Engineering, Hellenic
Mediterranean Univ., Greece, ⁴Dept. of Electrical and
Computer Engineering, School of Engineering, Hellenic
Mediterranean Univ., Greece, ⁵Chemistry Dept., Univ.
of Crete, Heraklion, Greece

13:00-14:00 – Lunch

14:15 – Trip to Cantacuzino Castle, Busteni

Thursday, October 12, 11:20
Room 2

**NANOSCIENCE, NANOPHOTONICS &
MODELLING – Student Papers**
Session: N, N&M-S. Oral presentations

Chair: **F. Draghici**, Univ. POLITEHNICA of Bucharest,
Romania

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

N, N&M-S.1 TRANSFER OF NANOCRYSTALLINE GRAPHITE
11:20 FILMS ON POLYMERIC SUBSTRATES AS
FLEXIBLE ELECTROCHEMICAL SENSORS FOR
THE DETECTION OF ANTHRACENE,
M. C. Stoian*, **, **O. Simionescu***, **C. Romanitan***,
A. Dinescu*, **A. Radoi***, *IMT Bucharest, Romania,
**Faculty of Chemistry, Univ. of Bucharest, Romania

N, N&M-S.2 CATHODOLUMINESCENCE STUDY OF SILICON
11:40 VACANCIES COLOR CENTERS GENERATED BY
ION IMPLANTATION IN 6H-SiC, **E. Vuillermet***,
R. Haddadi**, **N. Bercu****, **L. Ottaviani*****,
L. Giraudet**, **M. Lazar***, *L2n, CNRS EMR 7004,
Univ. of Technology of Troyes, France, **LRN, Univ.
of Reims Champagne Ardenne, France,
***Aix-Marseille Univ, Univ. de Toulon, CNRS,
IM2NP, France

N, N&M-S.3 OH⁻ ions can reduce the iodide migration in MAPI,
12:00 **R. E. Brophy**¹, **M. Kateb**², **I. Ghitu**^{3,4}, **N. Filipoiu**^{3,6},
K. Torfason¹, **H. G. Svavarsson**¹, **G. A. Nemnes**^{3,5,6},
I. Pintilie⁷, **A. Manolescu**¹, ¹Dept. of Engineering,
Reykjavik Univ., Iceland, ²Dept. of Physics, Chalmers
Univ. of Technology, Sweden, ³Univ. of Bucharest,
Romania, ⁴National Institute for Laser, Plasma and
Radiation Physics, Romania, ⁵Research Institute of the
Univ. of Bucharest (ICUB), Romania, ⁶Horia Hulubei
National Institute for Physics & Engineering, Romania,
⁷National Institute of Materials Physics, Romania

N, N& M-S.4 12:20 SUBSTRATE NETWORK MODELING FOR LATERAL p-GaN GATE HEMTs IN A 200V GAN-IC PLATFORM, **M. Alaei¹, H. De Pauw¹, U. Chatterjee², S. Decoutere², J. Lauwaert³, B. Bakeroot¹**, ¹Center for Microsystems Technology (CMST), IMEC and Ghent Univ., ²Interuniversity Microelectronics Center (IMEC), ³Liquid Crystals and Photonics (LCP) and Ghent Univ., Belgium

13:00-14:00 – Lunch

14:15 – Trip to Cantacuzino Castle, Busteni

Friday, October 13, 09:00
Room 1

PLENARY SESSION 3 (Invited Papers)
Session: PS3. *Oral presentations*

Chair: **O. Buiu**, IMT Bucharest, Romania
A. Müller, IMT Bucharest, Romania

- PS3.1** EMERGENT FUNCTIONALITIES OF
09:00 NANOSTRUCTURED FERROELECTRICS FOR
COMPUTING AND NANOELECTRONIC
APPLICATIONS, **I. A. Lukyanchuk**, Univ. de
Picardie Jules Verne, France
- PS3.2** COMPLEMENTARY SIC TECHNOLOGY FOR
09:30 INTEGRATED POWER END OPTOELECTRONIC
DEVICES, **M. Lazar**, L2n-CNRS EMR 7004 & UTT
Troyes, France
- PS3.3** EMERGING NANOSCALE MATERIALS FOR
10:00 FUTURE GENERATION OF ENERGY
AUTONOMOUS INTERNET OF THING DEVICES,
M. Modreanu, Tyndall National Institute, Univ.
College Cork, Ireland

10:30–10:50 – Coffee break

Friday, October 13, 10:50

Room 1

**MICROPHOTONICS &
MICROWAVES**

Session: M&MW. Oral presentations

Chair: **D. Cristea**, IMT Bucharest, Romania

M. Lazar, CNRS & UTT Troyes, France

M& MW.1 10:50 ENHANCEMENT IN PHOLUMINESCENCE OF GaPAsN/GaP LAYERS BY 6-MeV ELECTRON IRRADIATION AND RAPID THERMAL ANNEALING, **E-M. Pavelescu^{1*}, D. Ticoș², O. Ligor¹, C. Romanitan¹, A. Matei¹, F. Comănescu¹, V. Țucureanu¹, E. Constantinescu², A. Wakahara³, K. Yamane³**, ¹IMT Bucharest, Romania, ²National Institute for Laser, Plasma and Radiation Physics, Romania, ³Toyohashi Univ. of Technology, Japan

M& MW.2 11:10 PARAMETER SPACE EXPLORATION OF TAMM PLASMON RESONANCE BASED SENSORS, **P. Varasteanu**, IMT Bucharest, Romania

M& MW.3 11:30 FOURIER ANALYSIS OF THE OPTICAL FIELD GENERATED BY A DISCREET SPIRAL PHASE PLATE, **G. A. Bulzan^{1,2}, R. Rebigan¹, R. Tudor¹, M. Kusko¹, C. Kusko^{1*}**, ¹IMT Bucharest, ²Faculty of Physics, Univ. of Bucharest, Romania

M& MW.4 11:50 OPTICAL EFFECTS GENERATED BY HYBRID STRUCTURES ON PHOTO MOBILE POLYMER SUBSTRATE FOR SPECTRAL ANALYSIS INSTRUMENTATION, **B. A. Sava^{*, **}, D. Ulieru^{***}, I. Sandu^{*}, B. S. Calin^{**}, O. M. Ulieru^{***}, L. Boroica^{*}, A. V. Filip^{*}, M. C. Dincă^{*}, A. M. I. Trefilov^{*}, C. T. Fleacă^{*}, M. Dumitru^{*}, M. Zamfirescu^{*}**, ^{*}National Institute for Laser, Plasma and Radiation Physics, ^{**}Univ. POLITEHNICA of Bucharest, ^{***}SITEX 45 SRL, Romania

M& MW.5 12:10 DESIGN CONSIDERATIONS FOR USING DUAL-BAND REAL-TO-COMPLEX IMPEDANCE TRANSFORMERS CONSISTING ONLY OF TRANSMISSION LINE SECTIONS, **S. Simion**, Electronics and Communications Engineering Dept., MTA, Romania

M& MW.6 PASSIVE HARMONIC RFID TAG WITH ENERGY
HARVESTING FEATURES, **A.-C. Bunea***,
12:30 O. G. Profirescu**, **D. Neculoiu*,****, *IMT Bucharest,
**Univ. POLITEHNICA of Bucharest, Romania

13:00-14:00 – Lunch

Friday, October 13, 10:50

Room 2

**NANOSCIENCE &
MICROSENSORS**

Session: N&M. Oral presentations

Chair: **C. Kusko**, IMT Bucharest, Romania

V. Teodorescu, National Institute of Materials
Physics, Romania

N&M.1 IMPROVING DIELECTRIC CONSTANT AND
10:50 RESIDUAL STRESS IN METAL-INSULATOR-

METAL CAPACITORS USING DIFFERENT
STACKED THICK DIELECTRIC MATERIALS,
N. Zeidi^{1,2}, N. André¹, F. Tounsi^{1,2}, D. Flandre¹

¹SMALL Research Group, ICTEAM Institute, Univ.
catholique de Louvain, Belgium, ²SI2E Lab., École
nationale d'ingénieurs de Sfax, Univ. de Sfax, Tunisia

N&M.2 OPTICAL PROPERTIES, SYNTHESIS AND
11:10 APPLICATIONS OF POLYMER PHOTONIC

CRYSTALS, **E. Rusen¹, A. Diacon^{1,2}, A. Mocanu^{1,3*}**

¹Univ. POLITEHNICA of Bucharest, Faculty of
Chemical Engineering and Biotechnologies, ²Military
Technical Academy, ³IMT Bucharest, Romania

N&M.3 INFLUENCE OF CALCINATION TEMPERATURE
11:30 AND DOPING AMOUNT ON THE

MORPHOLOGICAL AND FUNCTIONAL
PROPERTIES OF METAL MODIFIED TiO₂
NANOSTRUCTURES, **P. Pascariu^{*,**,***},**

M. Sucheai^{*,,***}, E. Koudoumas^{*,**,***}, ***“Petru
Poni” Institute of Macromolecular Chemistry, Romania,

******Center of Materials Technology and Photonics,
School of Engineering, Hellenic Mediterranean Univ.,
Crete, Greece, *******IMT Bucharest, Romania

N&M.4 SURFACE-ENHANCED RAMAN SCATTERING
11:50 WITH SILICON NANOTREES, **A. Boldeiu,**

O. Brancoveanu, P. Varasteanu, C. Pachiui,
A. Avram, G. Craciun, I. Mihalache, IMT Bucharest,
Romania

- N&M.5** ENHANCING NO₂ GAS SENSING PERFORMANCE
12:10 AT ROOM TEMPERATURE USING
 ELECTRODEPOSITED COMPOSITE PPy-rGO-Fc,
A. Grigoriu*, **C.-M. Mihailescu*,****, **M. Savin***,
C. Braşoveanu*, **C.-A. Moldovan***, **S. Dinulescu***,
G.-S. Muscalu*, **O. Brincoveanu*,*****, **B. Firtat***,
M. Ion*, **D. Dragomir***, **A. Anghelescu***, *IMT
 Bucharest, **Faculty of Pharmacy, “Titu Maiorescu”
 Univ.- UTM Bucharest, ***Research Institute of the
 Univ. of Bucharest- ICUB Bucharest
- N&M.6** PIEZOELECTRIC MEMS ENERGY HARVESTER
12:30 FOR ULTRA-LOW POWER APPLICATIONS,
G. Muscalu^{1,2}, **S. Dinulescu¹**, **B. Firtat¹**,
A. Anghelescu¹, **C. Moldovan¹**, **C. Brasoveanu¹**,
A. Tulbure³, **M. Ekwińska⁴**, **D. Szmigiel⁴**,
M. Zaborowski⁴, **J. Zając⁴**, **G. Sirbu⁵**, **N. Boicea⁵**,
¹IMT Bucharest, Romania, ²Univ. POLITEHNICA of
 Bucharest, Romania, ³Univ. “1 Decembrie 1918” Alba
 Iulia, Romania, ⁴Łukasiewicz - Instytut Technologii
 Elektronowej, Poland, ⁵Renault Technologie Roumanie,
 Romania

13:00-14:00 – Lunch

Friday, October 13, 14:00

Room 1

**MODELLING &
SEMICONDUCTOR DEVICES**
Session: M&SD. *Oral presentations*

Chair: **L. Dobrescu**, Univ. POLITEHNICA of Bucharest,
Romania

D. Neculoiu, IMT Bucharest, Romania

M&SD.1 ADAPTIVE PLANNING SEARCH ALGORITHM

14:00 FOR ANALOG CIRCUIT VERIFICATION,
C. Manolache*, **C. Andronache***, **A. Caranica***,
H. Cucu*, **A. Buzo****, **C. Diaconu****, **G. Pelz****,
*Univ. POLITEHNICA of Bucharest, **Infineon
Technologies

M&SD.2 MODELING FORWARD CHARACTERISTICS OF

14:20 HIGH TEMPERATURE CAPABLE SCHOTTKY
DIODES – HIGH-ACCURACY OPTIMIZATION
METHODS –, **Gh. Pristavu¹**, **D.-T. Oneata¹**,
R. Pascu^{1,2}, **M.-C. Șerbănescu¹**, **A. Enache¹**,
F. Draghici¹, **Gh. Brezeanu¹**, ¹Univ. POLITEHNICA
of Bucharest, ²IMT Bucharest, Romania

M&SD.3 TOWARDS HIGHLY UNIFORM AND STABLE

14:40 SOURCE - GATED ORGANIC
PHOTOTRANSISTORS, **E. Bestelink***,
U. Zschieschang**, **H. Klauk****, **R. A. Sporea***,
*Advanced Technology Institute, Univ. of Surrey, UK,
**Max Planck Institute for Solid State Research,
Germany

M&SD.4 DEMONSTRATING THE ICeGaN INTEGRATED

15:00 POWER HEMT APPROACH TOWARDS EXTREME
GATE ROBUSTNESS, **K. Mukherjee***,
L. Efthymiou*, **K. Ledins***, **D. Popa***, **B. Wang****,
Q. Song**, **Y. Zhang****, **G. Longobardi***, **F. Udrea***,
*Cambridge GaN Devices Ltd., Cambridge, UK,
**Virginia Tech, USA

M&SD.5 MODIFIED METAL ASSISTED PHOTOCHEMICAL
15:20 ETCHING TECHNIQUE FOR SiC
POROSIFICATION, **R. Pascu, M. Simion,**
C. Romanitan, I. Mihalache, P. Varasteanu,
G. Craciun, IMT Bucharest, Romania

15:40–15:50 – Coffee break

Friday, October 13, 14:00

Room 2

**EMERGING FUNCTIONAL PHASE-
CHANGE MATERIALS FOR
PLASMONIC, PHOTONIC AND
MICROELECTRONIC APPLICATIONS - I**
Oral presentations

Chair: **M. Losurdo**, CNR ICMATE, Italy
M. Modreanu, Tyndall National Institute, Univ.
College Cork, Ireland

- 14:00** NANOPHOTONIC LOW-LOSS OPTICAL MODULATOR ON-CHIP EQUIPPED WITH PHASE CHANGE MATERIAL CELL, **A. P. Ovyvan¹, N. Vollmar¹, Y. Gutiérrez², M. Salinga¹, M. Losurdo², W. H. P. Pernice^{1,3}**, ¹Univ. of Münster, Physikalisches Institut, Center for Nanotechnology, Germany, ²Istituto di Chimica della Materia Condensata e delle Tecnologie per l'Energia, ICMATE, CNR, Italy, ³Kirchhoff-Institute for Physics, Heidelberg Univ., Germany
- 14:20** PLASMONIC TUNABLE PHOTODETECTION ENABLED BY HOT-ELECTRONS WITH PHASE-CHANGE MATERIAL Sb_2S_3 , **G. Santos¹, M. Georghe², C. Cobianu², M. Modreanu³, M. Losurdo⁴, Y. Gutiérrez^{4,5}, F. Moreno^{1*}**, ¹Univ. of Cantabria, Spain, ²NANOM MEMS Srl, Romania, ³Tyndall National Institute-Univ. College Cork, Ireland, ⁴CNR ICMATE, Italy, ⁵Univ. of Oviedo, Spain
- 14:40** LASER-INDUCED HEATING, MELTING, AND RAPID COOLING OF THIN-FILM PHASE CHANGE MATERIALS, **J. Resl, C. Cobet**, School of Education, Johannes Kepler Univ., Austria
- 15:00** PREDICTION OF FIRST ORDER PHASE TRANSITIONS WITH ELECTRON-PHONON COUPLING, **M. Graml^{*,**}, K. Hingerl^{**}**, ^{*}School of Education, Johannes Kepler Univ., ^{**}Center for Surface- and Nanoanalytics, Johannes Kepler Univ., Austria

15:20 LEVERAGING DESIGN AND TECHNOLOGY OF THE Sb₂S₃/Au SURFACE PLASMON ENHANCED HOT-ELECTRON SCHOTTKY DETECTORS FOR TELECOM WAVELENGTH BANDS APPLICATIONS, **C. Cobianu**^{1,6}, **M. Gheorghe**¹, **G. Santos**², **M. Modreanu**³, **Y. Gutierrez**⁴, **F. Moreno**², **M. Losurdo**⁵, ¹NANOM MEMS, Romania, ²Univ. of Cantabria, Spain, ³Tyndall National Institute-Univ. College Cork, Ireland, ⁴CNR ICMATE, Italy, ⁵Institute of Nanotechnology CNR-NANOTEC, Italy, ⁶Academy of Romanian Scientists, Romania

15:40–15:50 – Coffee break

Friday, October 13, 15:50
Room 1

INTEGRATED CIRCUITS
Session: IC. *Oral presentations*

Chair: **S. Marinca**, Technical Univ. of Cluj-Napoca, Romania

M. Neag, Technical Univ. of Cluj-Napoca, Romania

IC.1 EVALUATION OF AES CRYPTOGRAPHIC
15:50 ALGORITHM ON A GENERAL-PURPOSE MAP-SCAN ACCELERATOR, **A.-C. Pietricică, M. Antonescu, G.-V. Popescu**, Univ. POLITEHNICA of Bucharest

IC.2 DESIGNER-LIKE AUTOMATED CIRCUIT SIZING
16:10 FOR MULTILoop LDO, **C. Vişan¹, M. Sieberer², H. Cucu¹**, ¹Univ. POLITEHNICA of Bucharest, Romania, ²Infineon Technologies

IC.3 ELECTROMAGNETIC INTERFERENCE (EMI)
16:30 EVALUATION OF A PSEUDO-CONSTANT FREQUENCY, HYSTERETIC BUCK DC-DC CONVERTER FOR AUTOMOTIVE APPLICATIONS, **F. Dumitru^{*,**}, O. Serpedin^{*}, I.-A. Ilie^{*,**}, Gh. Brezeanu^{**}**, ^{*}Infineon Technologies Romania, ^{**}Univ. POLITEHNICA of Bucharest, Romania

IC.4 IN FOCUS: DATA HOLD TIME FOR
16:50 TEMPERATURE SENSORS WITH HIGH SPEED I2C INTERFACE, **A. Vasile (Dragan)^{*,**}, A. Negut^{*}, A. Enache^{*}, I. Hurez^{*}, V. Anghel^{*}, Gh. Brezeanu^{**}**, ^{*}ON Semiconductor, ^{**}Univ. POLITEHNICA of Bucharest, Romania

17:10 -17:30 – Coffee break

Friday, October 13, 15:50

Room 2

**EMERGING FUNCTIONAL PHASE-
CHANGE MATERIALS FOR
PLASMONIC, PHOTONIC AND
MICROELECTRONIC APPLICATIONS - II**
Oral presentations

Chair: **M. Losurdo**, CNR ICMATE, Italy
M. Modreanu, Tyndall National Institute, Univ.
College Cork, Ireland

- 15:50** OPTICAL PROPERTIES OF CRYSTALLINE AND AMORPHOUS GALLIUM MONOSULFIDE, **Y. Gutiérrez^{1,2,*}**, **S. Dicorato³**, **M. M. Giangregorio³**, **K. Hingerl⁴**, **C. Cobet⁴**, **M. Losurdo¹**, ¹Istituto di Chimica della Materia Condensata e delle Tecnologie per l'Energia, CNR, Italy, ²Univ. of Oviedo, Spain, ³Institute of Nanotechnology, CNR-NANOTEC, Italy, ⁴Center for Surface and Nanoanalytics (ZONA), Johannes Kepler Univ., Austria
- 16:10** EXCITONIC FEATURES IN THE OPTICAL RESPONSE OF LAYERED GALLIUM SULPHIDE, **D. Juan^{1*}**, **Y. Gutiérrez^{2,3}**, **P. G. Fernández⁴**, **J. Junquera⁴**, **M. Losurdo²**, **F. Moreno¹**, ¹Dept. de Física Aplicada, Univ. de Cantabria, Spain, ²Istituto di Chimica della Materia Condensata e delle Tecnologie per l'Energia, CNR, Italy, ³Univ. of Oviedo, Spain, ⁴Univ. de Cantabria, Spain
- 16:30** CHEMICAL VAPOR DEPOSITION OF Sb₂S₃ AS OPTICAL PHASE CHANGE MATERIAL FOR PHOTONIC APPLICATIONS, **S. Dicorato***, **M.M. Giangregorio***, **M. Losurdo****, *Institute of Nanotechnology, CNR-NANOTEC, Italy, **Institute of Condensed Matter Chemistry and Technologies for Energy, CNR-ICMATE, Italy

17:10 -17:30 – Coffee break

Friday, October 13, 17:30

Room 1

**NANOSCIENCE &
NANOENGINEERING**
Session: P4. Poster Session

Chair: **A. M. Lepadatu**, National Institute of Materials
Physics, Romania

C. Romanitan, IMT Bucharest, Romania

- P4.1** THERMOELECTRIC PROPERTIES OF Ag-DOPED SnSe MICROWIRES AND LAYERS, **L. Konopko***, **E. Rusu***, **A. Nikolaeva***, **V. Morari***, **I. Popov***, **T. Coromislichenco***, **V. Smyslov***, **D. Nika****, **T. Huber*****, *Ghitu Institute of Electronic Engineering and Nanotechnologies, Technical Univ. of Moldova, **Moldova State Univ., Moldova, ***Howard Univ., USA
- P4.2** STRUCTURAL AND MORPHOLOGICAL PROPERTIES OF COLLAGEN ENCAPSULATING *ACHILLEA SETACEA* ESSENTIAL OIL DESIGNED FOR BIOMEDICAL APPLICATIONS, **O. Brîncoveanu^{1,2,*}**, **I. C. Marinaș²**, **D. M. Gaboreanu²**, **V. Tucureanu¹**, ¹IMT Bucharest, Romania, ²Research Institute of the Univ. of Bucharest – ICUB Bucharest, Romania
- P4.3** NEAR INFRARED PHOTO-RESPONSE OF AS-DEPOSITED FILMS BASED ON GeSn NANOPARTICLES IN Si₃N₄ DIELECTRIC, **I. Stavarache***, **P. Prepelita****, **O. Cojocaru***, **V. S. Teodorescu***,***, **M. L. Ciurea***,***, *National Institute of Materials Physics, **National Institute for Laser, Plasma and Radiation Physics, ***Academy of Romanian Scientists, Romania
- P4.4** TOPOLOGICAL INSULATORS BASED ON LAYERS AND FOILS FOR THERMOELECTRIC MICROCOOLING DEVICES, **A. Nikolaeva***, **L. Konopko***, **T. Huber****, **I. Gherghishan***, **G. Para***, **D. Nika*****, **T. Coromislichenco***, *Ghitu Institute of Electronic Engineering and Nanotechnologies, Technical Univ. of Moldova, Moldova, **Howard Univ., USA, ***Moldova State Univ., Moldova

- P4.5** TUNING NEAR-INFRARED EMISSION IN METASURFACES WITH MULTI-FUNCTIONALITIES, **A. Radu, S. Iftimie, A.-M. Raduta, D. Dragoman***, Univ. of Bucharest, Faculty of Physics, Romania
- P4.6** EXPLORING THE OXYGEN EFFECT ON OPTICAL PROPERTIES OF AMORPHOUS VANADIUM OXIDE THIN FILMS, **I. Mihalache, S. Vulpe, G. Craciun, C. Romanitan, F. Comanescu, R. Plugaru**, IMT Bucharest, Romania
- P4.7** AN EMPIRICAL STUDY OF NANOCRYSTALLINE GRAPHITE'S MORPHO-STRUCTURAL AND ELECTRICAL PROPERTIES AS A FUNCTION OF SUBSTRATE TEMPERATURE DURING PECVD SYNTHESIS, **O. -G. Simionescu, O. Brîncoveanu, C. Pachiu, O. Ligor, A. Avram, M. Aldrigo**, IMT Bucharest, Romania
- P4.8** A METHOD FOR COMPARING DRY ETCH EQUIPMENT AND TRANSFERRING ETCH RECIPES, **H.-W. Veltkamp¹, A. Avram², M. Eliáš³, S. Ronchin⁴, C. de Boer⁵, J. Høvik⁶, M. de Boer¹**, ¹MESA+ Institute for Nanotechnology, Univ. of Twente, The Netherlands, ²IMT Bucharest, Romania, ³Central European Institute of Technology, Czech Republic, ⁴Fondazione Bruno Kessler (FBK), Italy, ⁵Kavli Institute of Nanoscience Delft, The Netherlands, ⁶Norwegian Univ. of Science and Technology, Norway
- P4.9** ASSESSING MEMRISTOR BEHAVIOR OF HETEROSTRUCTURES BASED ON REDUCED GRAPHENE OXIDE : PVA NANOCOMPOSITE - INTERDIGITATED COMB STRUCTURE Al/Au ON GLASS SUBSTRATE, **F. C. Comanescu, M. Purica, C. Obreja**, IMT Bucharest, Romania
- P4.10** SURFACE PHONONS-INDUCED 1/f NOISE IN Bi₂Se₃, **M. Mihaila, P. Varasteanu, S. Dinulescu**, IMT Bucharest, Romania
- P4.11** PEROVSKITE NANOMATERIALS AS POTENTIAL SENSING LAYERS FOR THE DETECTION OF ORGANOPHOSPHORUS COMPOUNDS, **A. Baracu*, C. Obreja*, O. Brîncoveanu*, R. Müller*, C. Mitrea**, I. Balcu***, C. Macarie***, P. Sfirloaga*****, *IMT Bucharest, **S.C. ECONIRV SRL, ***National Institute of R&D for Electrochemistry and Condensed Matter (INCEMC), Timisoara, Romania

- P4.12** SURFACE PRE-TREATMENT OF ALUMINUM ALLOY FOR ADHESIVE BONDING IMPROVEMENT BY MAPLE ASSISTED PULSED LASER EVAPORATION TECHNIQUE, **O. Brincoveanu**^{1,2*}, **E. Rusen**³, **V. Dincă**⁴, **A. Diacon**^{3,5}, **G. Toader**⁵, **A. Mocanu**^{1,3*}, ¹IMT Bucharest, ²Research Institute of the Univ. of Bucharest – ICUB Bucharest, ³Univ. POLITEHNICA of Bucharest, Faculty of Chemical Engineering and Biotechnologies, ⁴National Institute for Laser, Plasma and Radiation Physics, ⁵Military Technical Academy, Romania
- P4.13** RAMAN STUDY OF TRANSPARENT DOPED ZnO THIN FILMS FABRICATED BY SPRAY DEPOSITION, **C. Pachiu**¹, **M. Manica**^{1,2}, **P. Pascariu**^{3,4}, **I. V. Tudose**^{4,5}, **E. Koudoumas**^{2,4}, **M. Suche**^{2,3*}, ¹IMT Bucharest, Romania ²Univ. of Bucharest, Faculty of Physics, Romania, ³“Petru Poni” Institute of Macromolecular Chemistry, Romania, ⁴Center of Materials Technology and Photonics, School of Engineering, Hellenic Mediterranean Univ., Greece, ⁵School of Engineering, Hellenic Mediterranean Univ., Greece, ⁶Univ. of Crete, Greece

**20:30 – CAS 2023 Banquet including
Best Paper Awards ceremony
(Hotel Sinaia Restaurant)**

CONFERENCE OFFICE ADDRESS

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