



MINISTRY of EDUCATION
and
MINISTRY of RESEARCH,
INNOVATION and
DIGITIZATION



NATIONAL INSTITUTE
for R&D in ELECTRICAL
ENGINEERING
ICPE-CA Bucharest



"ȘTEFAN CEL MARE"
UNIVERSITY of
SUCEAVA



UNIVERSITY
POLITEHNICA
Bucharest



ROMANIAN EMC
ASSOCIATION

SPONSORS:



International Workshop of Electromagnetic Compatibility

the 13th edition of CEM - 2022

Suceava, ROMANIA
14th - 16th September 2022

Building D of "Ștefan cel Mare" University of Suceava -
"Dimitrie Leonida" Conference Hall
address: University Street no. 13, Suceava - 720229,
Suceava County, Romania

Online address: ZOOM Link

<https://us02web.zoom.us/j/82002577061?pwd=QUtRMVoySIIONOIzUnR5TzV2YVh3dz09>

- PROGRAM -

Wednesday, 14 September 2022	
12 ⁰⁰ - 15 ⁰⁰	Accommodation. Preliminary information. USV Campus Visit.
15 ⁰⁰ - 15 ⁴⁵	Registration of participants. Coffee Break

Wednesday, 14 September 2022	
15⁴⁵ - 16¹⁵	Opening Ceremony Sergiu NICOLAIE, <i>General Director INCDIE ICPE-CA Bucharest</i> Mihai DIMIAN, <i>Vice-Rector of "Ștefan cel Mare" University of Suceava</i> Eros-Alexandru PĂTROI, <i>Scientific Director INCDIE ICPE-CA Bucharest</i> <i>Representative of the MCID</i>
16¹⁵ – 18⁴⁵	Plenary Session, INVITED LECTURES Chairs: Marcel OPRIȘ and Adrian GRAUR
	16¹⁵ – 16⁴⁵ BIOELECTROMAGNETISM AND QUANTUM BIOMAGNETOMETRY BIOLOGIC INTERACTIONS WITH ELECTROMAGNETIC FIELDS - A LIVED HISTORY IN IASI Octavian BALTAG "Grigore T. Popa" University of Medicine and Pharmacy of Iasi, Romania Terraflux Control Ltd., Iasi, Romania
	16⁴⁵ – 17¹⁵ EMC AND PQ PROBLEMS IN TRANSPORTATION ELECTRIC DRIVE SYSTEMS, INCLUDING RAILWAY SYSTEMS Petre-Marian NICOLAE (online) University of Craiova, Faculty of Electrical Engineering, Craiova, Romania
	17¹⁵ – 17⁴⁵ TIME VARIABILITY FEATURES OF 4G AND 5G (SUB-6 GHz) EMISSIONS OF MOBILE TERMINALS Simona MICLĂUȘ^{1,2}, Vivian-Mihaela MAFTEI¹, Delia Bianca DEACONESCU², Andreea Maria BUDA², David VATAMANU^{1,2} (online) ¹ "Nicolae Balcescu" Land Forces Academy, Sibiu, Romania ² Technical University of Cluj-Napoca, Doctoral School, Cluj-Napoca, Romania
	17⁴⁵ – 18¹⁵ LOW AND VERY LOW FREQUENCY ELECTROMAGNETIC SHIELDING OF CONDUCTIVE MATERIALS WITH OR WITHOUT MAGNETIC PROPERTIES Mihai BĂDIC, Cristian MORARI, Eros-Alexandru PĂTROI National Institute for Research and Development in Electrical Engineering ICPE-CA Bucharest, Romania
	18¹⁵ – 18⁴⁵ ELECTROMAGNETIC COMPATIBILITY FOR e-MOBILITY Andrei MARINESCU^{1,2} (online) ¹ ASTR, Craiova Branch, Romania ² ACER Association, Craiova, Romania

Wednesday, 14 September 2022	
18⁴⁵ – 19⁴⁵	Sponsors Exhibition / Presentations <i>D Building, "Dimitrie Leonida" Conference Hall & Hallway</i>
	18⁴⁵ – 19⁰⁰ ORACLE
	19⁰⁰ – 19¹⁵ Marc Tel S.I.T.
	19¹⁵ – 19³⁰ COMTEST S.R.L.
	19³⁰ – 19⁴⁵ ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY (OICPE)
20⁰⁰ – 22⁰⁰	Welcome Cocktail and Dinner <i>Continental Hotel Restaurant, 4 Mihai Viteazul Str., Suceava 720057, Romania</i>
Thursday, 15 September 2022	
09⁰⁰ – 10³⁰	Plenary Session, INVITED LECTURES Chairs: Andrei MARINESCU and Gheorghe SAMOILESCU
	09⁰⁰ – 09³⁰ ADVANCED EMC DESIGN AND RISK ANALYSIS THROUGH MACHINE LEARNING TECHNIQUES Philippe BESNIER (online) University Rennes, INSA Rennes, CNRS, Rennes, France
	09³⁰ – 10⁰⁰ ANALYSIS OF THE UNINTENDED PROPAGATION OF AUDIO SIGNAL EMITTED BY WIRELESS HEADPHONES Alexandru Mădălin VIZITIU^{1,3}, Bogdan Cătălin TRIP^{1,3}, Vlad Florian BUTNARIU^{1,3}, Valentin VELICU^{2,3}, Lidia DOBRESCU¹, Simona HALUNGA¹ ¹ University "Politehnica" of Bucharest, Faculty of Electronics, Telecommunications and Information Technology, Bucharest, Romania ² University "Politehnica" of Bucharest, Faculty of Electrical Engineering, Bucharest, Romania ³ The Special Telecommunications Service, Bucharest, Romania
	10⁰⁰ – 10³⁰ DEVELOPING HYBRID WIRELESS COMMUNICATIONS AND INFORMATION TECHNOLOGIES FOR VEHICLE SAFETY AND DRIVER ASSISTANCE Mihai DIMIAN¹, Alin CĂILEAN^{1,2}, Eduard ZADOBRISCHI^{1,3}, Lucian COSOVANU¹, Cătălin BEGUNI¹, Sevastian AVĂTĂMĂNIȚEI¹ ¹ Ștefan cel Mare University of Suceava, Romania ² University of Paris-Saclay, France ³ Technical University of Cluj Napoca, Romania

Thursday, 15 September 2022	
10³⁰ – 11⁰⁰	Coffee Break
11⁰⁰ – 13⁰⁰	Plenary Session, INVITED LESSONS Chairs: Alexandru MOREGA and Mihai DIMIAN
	11⁰⁰ – 11³⁰ ACHIEVING AN EFFICIENT MANAGEMENT OF NAVIGATION EQUIPMENT AND ANALYSIS OF A COMPUTER MODEL FOR THE TRAINING OF MARINE OFFICERS Bogdan ASALOMIA¹, Gheorghe SAMOILESCU², Cătălin CLINCI³ ¹ Northern Marine Management, Military Technical Academy, Bucharest, Romania ² Department of Electrical Engineering and Naval Electronics, Faculty of Marine Engineering, “Mircea cel Batran” Naval Academy, Constanta, Romania ³ Scientific Research Department, “Mircea cel Batran” Naval Academy, Constanta, Romania
	11³⁰ – 12⁰⁰ LIGHTNING PROTECTION OF RENEWABLE POWER SYSTEMS – A REVIEW Elena HELEREA, Marius Călin DANIEL (online) Transilvania University of Brasov, Brasov, Romania
	12⁰⁰ – 12³⁰ RECENT RESEARCH ON THE BIOLOGICAL EFFECTS IN SEVERAL CASES OF ENVIRONMENTAL AND SPECIFIC PROFESSIONAL EXPOSURE TO ELECTROMAGNETIC FIELDS Georgiana ROȘU¹, Sonia SPANDOLE-DINU², Ana-Maria CATRINA², Leontin TUȚĂ¹, Lars Ole FICHTE³, Octavian BALTAG⁴ (online) ¹ “Ferdinand I” Military Technical Academy, Bucharest, Romania ² „Cantacuzino” National Military-Medical Institute for Research and Development, Bucharest, Romania ³ “Helmut Schimdt” University, Hamburg, Germany ⁴ “Grigore T. Popa” University of Medicine and Pharmacy, Iasi, Romania
	12³⁰ – 13⁰⁰ ELECTROMAGNETIC INTERFERENCE OF EMISSION NOISE ON MOBILE COMMUNICATIONS INSIDE INDUSTRIAL UNMANNED AERIAL VEHICLES Koh WATANABE, Ryota SAKAI, Satoshi TANAKA, Makoto NAGATA (online) Graduate School of Science, Technology and Innovation, Kobe University, Kobe, Japan
13⁰⁰ – 15⁰⁰	Lunch <i>Continental Hotel Restaurant, 4 Mihai Viteazul Str., Suceava 720057</i>

Thursday, 15 September 2022	
15⁰⁰ – 16³⁰	Oral Session Chair: Mircea POPESCU
	15⁰⁰ – 15¹⁵ MATLAB OPTIMIZATION OF SELF AND MUTUAL INDUCTANCE CALCULATION FOR FLAT SPIRAL AND LOOP COILS UTILIZED IN WIRELESS DRONE CHARGING Vlad MOCANU, Vasile DOBREF, Florențiu DELIU (online) „Mircea cel Bătrân” Naval Academy, Department of Electrical Engineering, Constanța, Romania
	15¹⁵ – 15³⁰ ELECTROMAGNETIC SCREENING PROPERTY TESTING FOR A CONDUCTIVE METAL MATERIAL Mircea-Emilian ARDELEANU¹, Viorica VOICU², Livia-Andreea DINA¹ (online) ¹ Faculty of Electrical Engineering, University of Craiova, Craiova, Romania ² National Institute for Research, Development and Testing in Electrical Engineering – ICMET Craiova, Romania
	15³⁰ – 15⁴⁵ SIGNAL MODEL ADEQUACY INDICATOR FOR POWER QUALITY MONITORING Anca BRÎNCOVEANU, Efstathios FIORENTIS, Radu PLĂMĂNESCU, Ana-Maria DUMITRESCU, Mihaela ALBU University “Politehnica” of Bucharest, Faculty of Electrical Engineering, Bucharest, Romania
	15⁴⁵ – 16⁰⁰ IMPACT OF DIODE EMULATION MODE ON EMC-RELATED PERFORMANCE OF DrMOS-BASED BUCK CONVERTER Josip BAČMAGA, Franjo MIKIĆ, Adrijan BARIĆ (online) University of Zagreb, Faculty of Electrical Engineering and Computing, Zagreb, Croatia
	16⁰⁰ – 16¹⁵ SMART ADJUSTABLE OPTICAL ATTENUATOR Lilia SAVA, Ana NISTIRIUC, Andrei CHIHAI, Pavel NISTIRIUC, Serghei ANDRONIC Technical University of Moldova, Chisinau, Republic of Moldova
	16¹⁵ – 16³⁰ SPECIFIC ABSORPTION RATE (SAR) ASSESING IN TISSUE MODELS MIMICKING THE HUMAN HEAD AT 5G FREQUENCIES Delia Bianca DEACONESCU¹, Simona MICLĂUȘ² (online) ¹ Technical University of Cluj-Napoca, Doctoral School, Cluj-Napoca, Romania ² “Nicolae Balcescu” Land Forces Academy, Sibiu, Romania
16³⁰ – 17⁰⁰	Coffee Break

Thursday, 15 September 2022	
17⁰⁰ – 19¹⁵	Oral Session Chair: Simona MICLĂUȘ
	17⁰⁰ – 17¹⁵ HIGHLY DIRECTIVE VHF ANTENNA FOR APPLICATIONS IN THE 118-137 MHz RANGE David VATAMANU^{1,2}, Simona MICLĂUȘ^{1,2} (online) ¹ "Nicolae Balcescu" Land Forces Academy, Sibiu, Romania ² Technical University of Cluj-Napoca, Doctoral School, Cluj-Napoca, Romania
	17¹⁵ – 17³⁰ PEOPLE COUNTING IN A COVID-19 AND GDPR CONTEXT, USING AN IR-UWB RADAR, BASED ON ARTIFICIAL INTELLIGENCE ALGORITHMS Cristina POPOVICI¹, Emanuel RĂDOI², Leontin TUȚĂ¹ (online) ¹ "Ferdinand I" Military Technical Academy, Bucharest, Romania ² University of Western Brittany, Brest, France
	17³⁰ – 17⁴⁵ THE LOCAL RADIATED EMISSION OF AN WI-FI 6 CLIENT: PRELIMINARY OBSERVATIONS Andreea-Maria BUDA¹, Annamaria Sârbu² (online) ¹ Technical University of Cluj-Napoca, Doctoral School, Cluj-Napoca, Romania ² "Nicolae Balcescu" Land Forces Academy, Sibiu, Romania
	17⁴⁵ – 18⁰⁰ DEFECTOSCOPY TOOLS FOR THE EVALUTION OF NEAR FIELD RADIATED EMISSIONS Cezar-Ion ADOMNIȚEI, Cezar-Eduard LEȘANU, Adrian DONE "Ștefan cel Mare" University of Suceava, Suceava County, Romania
	18⁰⁰ – 18¹⁵ ABOUT THE ELECTROMAGNETIC COMPATIBILITY OF RADIO COMMUNICATION SYSTEMS Lilia SAVA, Ana NISTIRIUC, Andrei CHIHAI, Pavel NISTIRIUC, Serghei ANDRONIC Technical University of Moldova, Chisinau, Republic of Moldova
	18¹⁵ – 18³⁰ OPTIMIZATION OF ENERGY CONSUMPTION IN EDUCATIONAL INSTITUTIONS Victor ABABII, Viorica SUDACEVSCHI, Silvia MUNTEANU, Victoria ALEXEI, Ana ȚURCAN (online) Technical University of Moldova, Chisinau, Republic of Moldova

Thursday, 15 September 2022	
	<p>18³⁰ – 18⁴⁵ USING THE SPECTRAL FINGERPRINT OF MOBILE TACTICAL PLATFORM TO ENSURE EMISSIONS CONTROL AND PERSONNEL SAFETY Călin POPESCU¹, Cătălin NACIU^{1,2}, Mihai NICOLAE^{1,2}, Mircea POPESCU² ¹University “Politehnica” of Bucharest, Romania ²National Institute for Research and Development in Electrical Engineering ICPE-CA Bucharest, Romania</p>
	<p>18⁴⁵ – 19⁰⁰ ELECTROMAGNETIC FIELD LEVEL ANALYSIS IN DENSELY POPULATED AREAS Cătălin NACIU^{1,2}, Mircea POPESCU¹, Lucian PETRESCU², Mihai NICOLAE^{1,2} ¹National Institute for Research and Development in Electrical Engineering ICPE-CA Bucharest, Romania ²University “Politehnica” of Bucharest, Romania</p>
	<p>19⁰⁰ – 19¹⁵ MEASUREMENT METHODS IN 5G MOBILE COMMUNICATIONS Mihai NICOLAE^{1,2}, Mircea POPESCU¹, Cătălin-Andrei NACIU^{1,2} ¹National Institute for Research and Development in Electrical Engineering ICPE-CA Bucharest, Romania ²University “Politehnica” of Bucharest, Romania</p>
20⁰⁰ – 23⁰⁰	<p>Official Dinner <i>Continental Hotel Restaurant, 4 Mihai Viteazul Str., Suceava 720057</i></p>
Friday, 16 September 2022	
09³⁰ – 10³⁰	<p>Plenary Session, INVITED LECTURES Chair: Dan MILICI</p>
	<p>09³⁰ – 10⁰⁰ THE FUTURE OF THE USE OF ELECTROMAGNETIC FIELDS AND BEAMS IN MEDICINE AND BIOLOGY Nicolae I. VERGA "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania</p>
	<p>10⁰⁰ – 10³⁰ 5G EMF: REAL EXPOSURE LEVELS AND FALSE CLAIMS Jack ROWLEY (online) GSMA, London, UK</p>

Friday, 16 September 2022

10³⁰ – 11⁰⁰

Poster Sessions & Coffee Break

Chair: Eugen COCA

MATLAB ALGORITHMS FOR CHARACTERIZATION OF DETECTED FREQUENCIES AS STRATEGIES TO DETECT PATHOLOGICAL AGENTS OF TROPICAL DISEASES IN THE DIGITAL AMPRENT FROM THE BREATH TESTS

Alexandru TOPOR¹, Dumitru ULIERU², Cristian RAVARIU³, Florin BABARADA³

¹SDETTI Doctoral School from Polytechnical University of Bucharest, Romania

²SC Sitex 45 SRL, Bucharest, Romania

³University "Politehnica" of Bucharest, Faculty of Electronics ETTI, DCAE Department, Bucharest, Romania

EVALUATION OF INDOOR EXPOSURE TO RADIOFREQUENCY ELECTROMAGNETIC RADIATION FROM RADIOCOMMUNICATION PUBLIC SERVICES BY OUTDOOR MONITORING IN URBAN ENVIRONMENT OF WARSZAWA

Jolanta KARPOWICZ¹, Krzysztof GRYZ¹, Szymon CYGAN², Alicja ŁYJAK², Piotr TULIK²

¹Central Institute for Labour Protection - National Research Institute (CIOP-PIB), Department of Bioelectromagnetics, Warszawa, Poland

²Warsaw University of Technology, Faculty of Mechatronics, Institute of Metrology and Biomedical Engineering, Warszawa, Poland

MEASUREMENTS AND NUMERICAL MODELLING OF ELECTROMAGNETIC HAZARDS RELATED TO THE USE OF SURGICAL DIATHERMY DEVICES

Jolanta KARPOWICZ, Patryk ZRADZIŃSKI, Krzysztof GRYZ

Central Institute for Labour Protection-National Research Institute (CIOP-PIB), Department of Bioelectromagnetics, Warszawa, Poland

ELECTROMAGNETIC COMPATIBILITY ISSUES IN NANOPORE BIOSENSING TECHNOLOGIES

Iuliana ȘOLDĂNESCU¹, Mihai DIMIAN², Andrei LOBIUC³

¹MANSID Integrated Center for Research, Development and Innovation, "Ștefan cel Mare" University of Suceava, Romania

²Department of Computer, Electronics and Automation, "Ștefan cel Mare" University of Suceava, Romania

³Department of Biomedical Sciences, "Ștefan cel Mare" University of Suceava, Romania

Friday, 16 September 2022

EFFECTIVE SCREEN BASED ON COPPER – MAGNETIC COMPOSITION OF FLUOROSILOXANE RUBBER

Lilia SAVA, Ana NISTIRIUC, Andrei CHIHAI, Pavel NISTIRIUC, Serghei ANDRONIC

Technical University of Moldova, Chisinau, Republic of Moldova

AN OVERVIEW OF THE “STUDY ON THE EVALUATION OF THE ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2014/30/EU (EMCD)”

Jana PINTEA

National Institute for Research and Development in Electrical Engineering ICPE-CA Bucharest, Romania

ON THE ELECTROMAGNETIC COMPATIBILITY OF A SHIELDED ROOM IN PRESENCE OF PENETRATING WALL POWER AND DATA/SIGNAL CABLES

Vicențiu-Mario PETRACHE¹, Gabriela IOSIF²

¹Beia Consult International, Bucharest, Romania

²National Institute for Research and Development in Electrical Engineering ICPE-CA Bucharest, Romania

EMC AND TEMPEST - COMMON OBJECTIVES

Petruș BĂDULESCU, Daniel PETRESCU

BlueSpace Technology SRL, Bragadiru, Ilfov County, Romania

LOOP ANTENNA FOR PROXIMITY IMMUNITY TEST

Adrian CONSTANTINESCU, Alexandru STĂNESCU, Mihai DIMITRIU

OICPE, 313 Splaiul Unirii, District 3, Bucharest, Romania

11⁰⁰ - 12⁰⁰

Workshop closing Ceremony

Award ceremony "The best communications at oral and poster presentation sessions" for a junior participant

Concluding remarks

12⁰⁰ – 19⁰⁰

Box Lunch & CEM2022 Workshop Visit