

2021 10th International Conference on ENERGY and ENVIRONMENT (CIEM 2021)

**Bucharest, Romania
14-15 October 2021**



**IEEE Catalog Number: CFP21L60-POD
ISBN: 978-1-6654-4585-6**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21L60-POD
ISBN (Print-On-Demand):	978-1-6654-4585-6
ISBN (Online):	978-1-6654-4584-9

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

ELECTRICAL POWER SYSTEMS & SMART GRIDS

OPTIMAL POWER FLOW WITH FOUR OBJECTIVE FUNCTIONS USING IMPROVED DIFFERENTIAL EVOLUTION ALGORITHM: CASE STUDY IEEE 57-BUS POWER SYSTEM	1
<i>Murtadha Al-Kaabi, Layth Al-Bahrani, Virgil Dumbrava, Mircea Eremia</i>	
MULTIOBJECTIVE PROSUMER SURPLUS MANAGEMENT FOR OPTIMAL MICROGRID OPERATION	6
<i>Ovidiu Ivanov, Bogdan-Constantin Neagu, Andrei Cibotarica, Mihai Gavrilas</i>	
OPTIMAL POWER FLOW IN HYBRID HVAC/HVDC NETWORKS CONSIDERING THE HIGH PENETRATION OF WIND GENERATION	11
<i>Ioan Catalin Damian, Andreea Iantoc, Irina Picioroaga, Constantin Bulac, Brîndusa Mihaela Damian</i>	
ADAPTED GREY WOLF OPTIMIZER FOR DYNAMIC ECONOMIC DISPATCH IN A HYBRID MICROGRID	16
<i>Dorian O. Sidea, Andrei M. Tudose, Irina I. Picioroaga, Lucian Toma, Constantin Bulac</i>	
EV CHARGING CONTROL USING DSRC SYSTEM IN LVDN WITH DG PENETRATION	22
<i>Alexandru Kriukov, Mihai Gavrilas</i>	
LOAD ESTIMATION WITH THE CLUSTERING-BASED SELECTION OF THE ELECTRIC DISTRIBUTION SUBSTATIONS INTEGRATED IN SCADA SYSTEM.....	27
<i>Gheorghe Grigoras, Vasilica Dandea, Bogdan-Constantin Neagu, Florina Scarlatache</i>	
HARDWARE AND SOFTWARE IMPLEMENTATION OF A SELF-CALIBRATING SMART METER WITH TAMPER DETECTION.....	32
<i>Loredana Nicoleta Paven, Maria Lucia Crauciuc, Sebastian Avram, Radu Vasii, Dan Chiciudean</i>	
STATE OF THE ART OF HYBRID AC-DC MEDIUM VOLTAGE GRIDS	37
<i>Teodor-Ioan Diaconu, Mihai Sanduleac, Mircea Eremia</i>	
TRENDS TO INCREASE THE LIFE CYCLE OF A SUBSTATION IN CONTEXT OF SMART GRID	42
<i>Georgiana Ion, Sorina Costinas, Andrei Stan, Marius Eugen Tiboaca</i>	
SINGULAR VALUE DECOMPOSITION BASED APPROACH FOR VOLTAGE STABILITY ASSESSMENT IN POWER DISTRIBUTION SYSTEMS.....	47
<i>Andreea-Georgiana Iantoc, Constantin Bulac, Irina Picioroaga, Dorian O. Sidea, Ion Tristiu</i>	

ENERGY EFFICIENCY

ENERGY EFFICIENCY OF A NOVEL LOW CARBON BIO-BASED MATERIAL FOR BUILDING.....	52
<i>Kaoutar Zeghari, Hasna Louahlia, Ionut Victor Voicu, Mohamed Boutouil, Steve Goodhew, François Streiff</i>	

REDUCING THE ENVIRONMENTAL IMPACT OF INDUSTRIAL END-USERS BY USING COST EXEMPTION SCHEMES. LESSONS LEARNED FROM AN ENERGY MANAGEMENT PERSPECTIVE	57
<i>Mircea Scripcariu, Cristian Gheorghiu, Ioan Sevastian Bitir-Istrate, Oana Constantinescu, Miruna Gheorghiu, Stefan Gheorghe, Alexandra Gabriela Dobrica</i>	
POTENTIAL ANALYSIS OF A RECIPROCATING ACTIVE MAGNETIC REGENERATOR AT ROOM TEMPERATURE.....	62
<i>Dorin Botoc, Alexandru Salceanu, Monica Siroux</i>	
PRELIMINARY RESULTS - NUMERICAL SIMULATIONS FOR HEAT RECOVERY SYSTEM FROM WASTEWATER	67
<i>Paul Alexandru Danca, Amjed Albayati, Martin Ivanov, Angel Terziev, Sergey Mijorsk</i>	
APPLICATION OF THE NEW ROMANIAN METHODOLOGY FOR BUILDINGS ENERGY PERFORMANCE FOR A SINGLE-FAMILY HOUSE	71
<i>Andrei Damian, Andreea Vartires</i>	
ENERGY EFFICIENCY OF AN OIL INJECTED SCREW COMPRESSOR OPERATING AT VARIOUS DISCHARGE PRESSURES	76
<i>Sorin Tomescu, Valentin Petrescu, Alexandru Serban, Sebastian Voicu</i>	
FUNCTIONAL OPTIMIZATION RESOURCES OF A CONSTRUCTION MATERIALS MANUFACTURING COMPANY	81
<i>Ioan Felea, Vasile Moldovan, Dragos Meianu, Nicolae Rancov</i>	
ON THE TRACKS OF HEAT LOSSES REDUCTION FOR AN EDUCATIONAL HERITAGE BUILDING BY USING DYNAMIC SIMULATIONS	86
<i>Tiberiu Catalina, Roxana Stanica</i>	
STRATEGIES FOR OPTIMIZING ENERGY CONSUMPTION IN BUILDINGS	90
<i>Adriana Elena Nicolae, Horia Necula, Bogdan Carutasu</i>	
HEAT DEMAND ANALYSIS OF DISTRICT HEATING SUBSTATIONS FOR OPERATION IMPROVEMENT.....	94
<i>Roxana Patrascu, Victor-Eduard Cenusu, Mihaela Norisor, Eduard Minciuc</i>	
ENERGY EFFICIENCY AND COMPRESSED AIR SYSTEMS. A CASE STUDY	99
<i>Georgiana Moraru, Marcel Istrate</i>	

ENVIRONMENTAL IMPACT AND CLEAN ENERGY

APPLICATION OF CARBONATE LOOPING CYCLE AS AN ENERGY-EFFICIENT DECARBONIZATION PROCESS OF KEY FOSSIL-INTENSIVE INDUSTRIAL APPLICATIONS.....	103
<i>Calin-Cristian Cormos, Simion Dragan, Ana-Maria Cormos, Letitia Petrescu, Vlad-Cristian Sandu, Ionela-Dorina Dumbrava, Stefan Galusnyak</i>	
EXPERIMENTAL INVESTIGATIONS OF HYDROGEN IGNITION IN LAB SCALE COMBUSTOR	108
<i>Andrei Vlad Cojoccea, Mihnea Gall, Ionut Porumbel, Tudor Cuciuc, Madalina Botu</i>	
NOVEL TECHNOLOGY FOR CO ₂ CAPTURE USING GREEN SOLVENTS	113
<i>Mihaila Eliza Gabriela, Slavu Nela, Popa Daria Gabriela, Dinca Cristian Florian</i>	

TECHNICAL AND ECONOMICAL ASSESSMENT OF IGCC PLANT EQUIPPED WITH CHEMICAL ABSORPTION PROCESS	118
<i>Alexandra-Iuliana Tanase, Cosmin Karl Banica, Cristian Dinca</i>	
TECHNICAL AND ECONOMICAL ASSESSMENT OF MEMBRANE INTEGRATION IN IGCC	123
<i>Dinca Ionela Valentina, Dinca Cristian Florian</i>	
PRODUCTION OF H ₂ -RICH SYNGAS FROM BIOMASS GASIFICATION WITH CO ₂ CAPTURE TECHNOLOGY	128
<i>Nela Slavu, Cristian Dinca, Cosmin Karl Banica</i>	
BIOMASS ENERGY PROCESSES INVOLVED IN HEATING: MOROCCO CASE STUDY	133
<i>Mohamed Berrissoul, Reda El Makroum, Yassine Salih Alj</i>	
INFLUENCE OF IRON AND MANGANESE REGARDING THE WATER CORROSIVITY - A CASE STUDY IN BUZAU TOWN, ROMANIA	138
<i>Elena Vulpasu, Gabriel Racoviteanu, Eduard Dinet, Ioana Stanescu</i>	
THE RATIO CARBON/NITROGEN - INFLUENCE ON THE NITRIFICATION PROCESS IN BIOLOGICAL AERATED FILTER	143
<i>Adel S. Faskol, Gabriel Racoviteanu, Elena Vulpasu</i>	
CARBONATION AND CAPTATION OF CO ₂ : OPTIMISATION OF A FEASIBILITY DEMONSTRATION	147
<i>Philippe Duquenne, Florent Bourgeois, Virgil Dumbrava, George Cristian Lazaroiu</i>	
ANALYSIS OF YEARLY AND DAILY VARIATION OF THE GROUND LEVEL OZONE CONCENTRATION IN BUCHAREST, ROMANIA	152
<i>Vlad Iordache, Valentin Mihai Radu, V Asilica Vasile</i>	
BIODEGRADABLE WASTE TREATMENT: SEWAGE SLUDGE COMPOSTING - A CASE STUDY	156
<i>Diana Mariana Cocârta, Constantin Stan, Tiberiu Apostol, Constantin Streche, Alin Murariu, Cristina Feodorov, Adrian Todirascu</i>	
DICLOFENAC DEGRADATION UNDER HIGH PRESSURE HYDRODYNAMIC CAVITATION FIELD	159
<i>Adrian Ciocanea, Eugeniu Vasile, Gabriela Elena Dumitran, Liana Ioana Vuta, Mihaela Amalia Diminescu, Cornelia Nichita</i>	
MODELING OF HYDROCARBONS PROPAGATION ON THE JIU RIVER BASED ON ADVECTION-DIFFUSION EQUATION	163
<i>Dumitran Gabriela Elena, Vuta Liana Ioana, Diminescu Mihaela Amalia</i>	
A HYDRODYNAMIC CAVITATION - HIGH VOLTAGE DISCHARGE IN WATER PROCEDURE FOR RECYCLING PLATINUM GROUP METALS CONTAINED IN THREE-WAY CATALYST CONVERTERS	168
<i>Adrian Ciocanea, Eugeniu Vasile, Sanda Budea, Mihai Badic, Serban N. Stamatina</i>	
MSW MANAGEMENT IN A LACUSTRINE AREA: CIRCULAR ECONOMY CRITERIA AND EFFECTS OF COVID-19 EMERGENCY	173
<i>Anzhelika Karaeva, Fabio Conti, Vincenzo Torretta, Giorgio Ghiringhelli, Elena Romanovna Magaril, Elena Cristina Rada</i>	

THE IMPACT OF PHOTOVOLTAIC POWER SYSTEM ON CARBON FOOTPRINT IN THE WASTEWATER TREATMENT PLANT	178
<i>Corina Boncescu, Lacramioara Diana Robescu</i>	

FLUID MECHANICS AND TECHNICAL APPLICATIONS

NUMERICAL STUDY OF AIR QUALITY MONITORING UNDER CONDITIONS OF A URBAN FIRE	183
<i>Mihai Dima, Iulian-Cristian Ene, Vlad Iordache</i>	
VERIFICATION OF VENTILATION SYSTEM EFFICIENCY IN A CURVED SUBWAY TUNNEL IN CASE OF FIRE USING NUMERICAL MODELING	188
<i>Kubinyecz Francisc-Vladimir, Teodosiu Catalin</i>	
MEDICAL IMAGE-BASED NUMERICAL SIMULATION OF THE ABDOMINAL AORTA FLOW.....	193
<i>Alin F. Totorean, Maria C. Ioncica, Tiberiu Ciocan, Sandor I. Bernad, Claudia I. Totorean, Elena S. Bernad</i>	
DRUG PARTICLE DYNAMICS IN THE TWO DIFFERENT SIMPLIFIED STENT GEOMETRIES.....	198
<i>Maria C. Ioncica, Alin F. Totorean, Tiberiu Ciocan, Sandor I. Bernad, Claudia I. Totorean, Elena S. Bernad</i>	
STABILITY OF THE LID-CAVITY FLOW AT LOW REYNOLDS NUMBERS.....	203
<i>Nicoleta-Octavia Tanase, Diana Broboana, Corneliu Balan</i>	
URBANISATION AND CLIMATE CHANGE IMPACT ON URBAN WATER.....	207
<i>Alexandra Georgiana Ioan, Iulian Iancu, Alexandru Dimache, Anton Anton</i>	
THE INFLUENCE OF SURFACE TENSION ON RADIAL WICKING IN PAPER	212
<i>Daciana Botta, Istvan Magos, Corneliu Balan</i>	
TRANSITION FROM THREADS TO DROPLETS IN A MICROCHANNEL FOR LIQUIDS WITH NO VISCOSITY CONTRAST	216
<i>Eugen Chiriac, Marioara Avram, Corneliu Balan</i>	
IMPACT OF SOLID HYDROPHILIC SPHERES ON FLUID SURFACES.....	220
<i>Istvan Magos, Corneliu Balan</i>	
EXPERIMENTAL STUDY ON THE THERMAL ENVIRONMENT INSIDE A VEHICLE CABIN WITH INNOVATIVE AIR DIFFUSERS.....	224
<i>Ilinca Nastase, Paul Alexandru Danca</i>	
DESIGN AND SIMULATION OF ADAPTIVE NEURO-FUZZY INFERENCE SYSTEM INVERSE CONTROLLER FOR A COUPLED TANK SYSTEM	228
<i>Hamid Alshareefi, Ciprian Lupu, Severus Olteanu, Laith Ismail</i>	
THE INFLUENCE OF VENTILATION GAPS ON THE DYNAMICS OF A FIRE IN AN ENCLOSED SPACE.....	233
<i>Denis-Mihai Burada, Florin-George Gionea, Andrei-Mugur Georgescu</i>	
EXPERIMENTAL VALIDATION OF THE HUMAN THERMAL PLUME OF THE DRIVER INSIDE A VEHICLE CABIN.....	237
<i>Amaury Jamin, Bart Janssens, Walter Bosschaerts, Florin Bode, Paul Alexandru Danca, Ilinca Nastase</i>	

NUMERICAL SIMULATION OF VORTEX BREAKDOWN WITH CODE SATURNE	242
<i>Robert Mitrut, Diana Maria Bucur, Georgiana Dunca, Michel J. Cervantes</i>	
NUMERICAL STUDY OF CRITICAL VELOCITY OF THE AIRFLOW IN VENTILATED TUNNELS DURING FIRE INCIDENTS.....	247
<i>Florin-George Gionea, Denis-Mihai Burada, Andrei-Mugur Georgescu</i>	
EXPERIMENTAL ANALYSIS ON A MODEL OF A SMALL DUCTED WIND TURBINE EQUIPPED WITH PASSIVE FLOW CONTROL DEVICES	252
<i>Elena-Alexandra Chiulan, Costin Ioan Cosoiu, Andrei-Mugur Georgescu, Anton Anton, Mircea Değeratu</i>	
WALL-MODEL FOR TURBULENT FLOWS UNDER AN ADVERSE PRESSURE GRADIENT - ASYMMETRIC DIFFUSER	257
<i>Ionut Stelian Grecu, Georgiana Dunca, Diana Maria Bucur, Michel J. Cervantes</i>	
WATER HAMMER ANALYSIS ON A MAIN PIPE.....	262
<i>Ion Popa, Sorin Perju, Florian Marian Martan, Ionut Daniel Ungureanu</i>	
NEW APPROACH OF PRESSURE LOSSES IN HYDRAULIC POWER SYSTEMS	266
<i>Carmen-Anca Safta, Sanda-Carmen Georgescu, Liliana Dumitrescu</i>	
EXPERIMENTS AND NUMERICAL SIMULATIONS OF WATER FLOW OVER A SLIT WEIR FOR MEASURING VERY SMALL DISCHARGES AT RIVER INTAKES	271
<i>Daniela-Elena Gogoase Nistoran, Stefan-Mugur Simionescu, Nicoleta-Octavia Tanase</i>	
DESIGN AND NUMERICAL INVESTIGATION OF A SMALL AXIAL HYDROKINETIC TURBINE.....	276
<i>Diana Maria Bucur, Ionut Stelian Grecu, Robert Mitrut, Constantin Dragoi, Adrian-Ion Stroilescu, Georgiana Dunca</i>	

POWER ENGINEERING

STUDY OF THE STRUCTURAL MECHANICAL BEHAVIOUR IN LIQUID LEAD ENVIRONMENT FOR THE ALFRED GENERATION IV REACTOR.....	281
<i>Livia-Nicoleta Stoica, Vasile Radu, Alexandru Ionut Nitu, Ilie Prisecaru</i>	
COMPARISON BETWEEN RELAP/SCDAPSIM/MOD3.4 AND MOD3.6+ IN SIMULATING A CANDU6 SBO	285
<i>Roxana-Mihaela Nistor-Vlad, Daniel Dupleac, Andrei-Razvan Budu-Stanila, Victoria Dumitrescu</i>	
SEVERE ACCIDENT PROGRESSION IN CANDU USING A DETAILED MODEL FOR THE CORE DISASSEMBLY PHASE - PRELIMINARY RESULTS	290
<i>Victoria Dumitrescu, Roxana-Mihaela Nistor-Vlad, Daniel Dupleac, Andrei-Razvan Budu- Stanila</i>	
DEVELOPMENT OF THE ASYST VER 3.X LWR/HPWR BEST ESTIMATE INTEGRAL CODE.....	295
<i>Daniel Dupleac, Roxana-Mihaela Nistor-Vlad, Chris Allison, Judith Hohorst, Marina Perez- Ferragut</i>	
THE VARIATION OF CANDU SPENT FUEL CHARACTERISTICS DURING SURFACE STORAGE	300
<i>Andrei Turnea, Doina Pantazi</i>	

CONSIDERATIONS ABOUT POWER SYSTEMS RELIABILITY	304
<i>Florian Iulian Crisovan, Adrian Augustin Pocola, Elvis Alexandru Dogaru, Mihaela Frigura-Iliasa, Flaviu Mihai Frigura-Iliasa, Doru Vatau</i>	
UNCERTAINTY PROPAGATION IN THE ESTIMATION OF BENDING STRESS IN ACSR CONDUCTORS	308
<i>Damian Federico Campos, Andres Elias Ajas</i>	
A NEW APPROACH FOR THE COEXISTENCE STUDY OF URBAN BUILDINGS NEAR HIGH VOLTAGE OVERHEAD LINES	313
<i>Constantin Zetu, Bogdan-Constantin Neagu, Gheorghe Grigoras, Florina Scarlatache</i>	
ANALYSIS OF THE CO ₂ EMISSIONS FROM BATTERY ELECTRIC VEHICLES CHARGING CONSIDERING THE POWER GENERATION MIX	318
<i>Lucian Ioan Dulau, Dorin Bica</i>	
MATHEMATICAL MODEL OF THE LIFTING WORKING MODE OF A A MOBILE PLATFORM WITH HYDRAULIC DRIVE.....	323
<i>Liliana Dumitrescu, Carmen-Anca Safta, Corneliu Cristescu, Radu Radoi, Ioan Balan</i>	
THE INFLUENCE OF TWO MAIN DOPPANTS ON THE ELECTRICAL PROPERTIES OF METAL OXIDE VARISTORS.....	328
<i>Elvis Alexandru Dogaru, Adrian Augustin Pocola, Florian Iulian Crisovan, Mihaela Frigura-Iliasa, Flaviu Mihai Frigura-Iliasa, Doru Vatau</i>	
ABOUT ESTABLISHING THE FUNCTIONAL SERVICE LIMITS FOR LOW VOLTAGE METAL OXIDE VARISTORS.....	332
<i>Elvis Alexandru Dogaru, Adrian Augustin Pocola, Florian Iulian Crisovan, Mihaela Frigura-Iliasa, Flaviu Mihai Frigura-Iliasa, Vlad Vatau</i>	
<u>RENEWABLE ENERGIES</u>	
RENEWABLE ENERGY SOURCES USED FOR A LOW ENERGY BUILDING REHABILITATION.....	336
<i>Lelia Popescu, Razvan Popescu, Andrei Damian, Alexandru Serban</i>	
INVESTIGATION OF THE AIR LAYER THICKNESS INFLUENCE FOR A NOVEL DOUBLE SKIN TRANSPIRED SOLAR COLLECTOR.....	341
<i>Charles Berville, Cristiana Croitoru, Florin Bode</i>	
NUMERICAL ANALYSIS OF PCM PACKED BED HEAT STORAGE COUPLED WITH TRANSPIRED SOLAR COLLECTOR.....	346
<i>Octavian G. Pop, Florin Bode, Charles Berville, Cristiana Croitoru</i>	
INTEGRATION OF THERMAL PANELS IN THE DISTRICT HEATING OF BUCHAREST, ROMANIA.....	351
<i>Dorian-Corneliu Frusescu, Eduard Minciuc, George Darie, Madalina Barbu</i>	
STUDY ON OPTIMAL SOLAR THERMAL TECHNOLOGY USED FOR DHW PREPARATION BASED ON TRNSYS SIMULATION.....	356
<i>Mihai-Rares Sandu, Constantin Ionescu, Gabriela-Elena Iordache, Claudia-Madalina Dumitru</i>	
MATHEMATICAL MODELLING OF UNGLAZED TRANSPIRED SOLAR COLLECTORS	361
<i>Octavian G. Pop, Charles Berville</i>	

INTEGRATION OF HYBRID PHOTOVOLTAIC THERMAL PANELS (PVT) IN THE DISTRICT HEATING SYSTEM OF BUCHAREST, ROMANIA	366
<i>Madalina Barbu, Eduard Minciuc, Dorian Corneliu Frusescu, Diana Tutica</i>	
STUDY OF HYDROKINETIC TURBINE SHROUDS	371
<i>Paul Alexandru Danca, Florentina Bunea, Sergiu Nicolaie, Adrian Nedelcu, Nicolae Tanase, Corina Alice Babutanu</i>	
THE IMPACT OF ECOLOGICAL FLOW IN RENEWABLE ENERGY PRODUCTION	376
<i>Constantin Dragoi, Vlad Florin Pîraianu, Oana-Mihaela Constantinescu</i>	
VERTICAL AXIS WIND TURBINE BLADE MANUFACTURING USING COMPOSITE MATERIALS	381
<i>Ioana Octavia Bucur, Ion Malael, Mihai Predescu</i>	
EXPERIMENTAL RESEARCH ON THE OPERATION OF A PVT HYBRID SOLAR SYSTEM	386
<i>Sanda Budea, Stefan-Mugur Simionescu, Adrian Ciocanea</i>	
ON USING WELLS TURBINES TO HARVEST WAVE ENERGY AT THE BLACK SEA. CASE STUDY FOR A 5 KW TURBINE	390
<i>Andrei Dragomirescu</i>	
SHORT-TERM FORECASTING OF WIND POWER GENERATION	395
<i>Florin Ciprian Dan, Cristina Hora, Gabriel Bendea</i>	
SHORT TERM DAILY STORAGE NEED ASSESSMENT FOR A LARGE PV DEPLOYMENT SCENARIO - PRELIMINARY CASE STUDY FOR REPUBLIC OF MOLDOVA	400
<i>Cristina Efremov, Valentin Arion, Mihai Sanduleac</i>	
TECHNO-ECONOMIC ANALYSIS OF A RES MICROGRID: AN APPLICATION OF HOMER SOFTWARE	405
<i>Daniela Popescu</i>	
LAND USE POTENTIAL FOR PV PRODUCTION IN SYNERGY WITH AGRICULTURE - PRELIMINARY ANALYSIS FOR ROMANIA	409
<i>Mihai Sanduleac, Ion Tristiu, Alexandru Mandis, Dorel Stanescu, Mircea Solomon</i>	
INTEGRATION OF ENERGY STORAGE SYSTEMS INTO THE POWER SYSTEM FOR ENERGY TRANSITION TOWARDS 100% RENEWABLE ENERGY SOURCES.....	414
<i>Dumitru Braga</i>	
TECHNICAL POWER LOSSES IN ELECTRICAL DISTRIBUTION NETWORKS WITH RENEWABLE ENERGY SOURCES. CASE STUDY: GALATI ZONE, ELECTRICA MUNTENIA NORD	419
<i>Alex Bittenbinder, Constantin Barbulescu, Marin Salinschi, Stefan Kilyeni</i>	
 <u>SMART CITIES & DIGITAL TRANSFORMATION IN ENERGY</u>	
ANALYSIS OF PROTECTIVE SOLUTIONS FOR UNDERGROUND CABLE SYSTEM - APPLICATION FOR DANANG DISTRIBUTION GRID	424
<i>Trinh Trung Hieu, Tran Tan Vinh, Minh Quan Duong, Nguyen Nhu Khoa Nam, Gabriela Nicoleta Sava</i>	

LABORATORY FOR DIGITAL TECHNOLOGIES TESTING AND SKILLS DEVELOPMENT OF PROFESSIONALS AND STUDENTS.....	429
<i>Bogdan Leu, Mihai Marcolt, Oana Lebedov, Catalin Lisman, Gabriela Sava, Vladimir Tanasiev, Cristian Gheorghiu</i>	
SMART EDUCATION FOR POWER ENGINEERING DURING THE COVID-19 PANDEMIC.....	433
<i>Virgil Dumbrava, Theodor Miclescu, Gabriel Bazacliu, George Cristian Lazaroiu, Georgiana Balaban, Claudiu Stanculescu</i>	
HOLISTIC APPROACH FOR PLANNING THE ELECTRICAL NETWORKS OF SMART CITIES	438
<i>Virgil Dumbrava, Bogdan Dobrin, George Cristian Lazaroiu, Georgiana Balaban, Mariacristina Roscia, Philippe Duquenne, Filip Carlea</i>	
ALGORITHM FOR CALCULATING THE B-SPLINE COEFFICIENTS USED IN INTERPOLATIONS FOR HARMONICS ASSESSMENT IN POWER SYSTEMS APPLICATIONS.....	443
<i>Adrian Augustin Pocola, Elvis Alexandru Dogaru, Florian Iulian Crisovan, Mihaela Frigura- Iliasa, Flaviu Mihai Frigura-Iliasa, Doru Vatau</i>	
DIGITAL TRANSFORMATION PARADIGM FOR ASSET MANAGEMENT IN WATER DISTRIBUTION NETWORKS	447
<i>Francesco Gino Ciliberti, Luigi Berardi, Daniele Biagio Laucelli, Orazio Giustolisi</i>	
NUMERICAL SIMULATION OF THE NON-LINEAR RESPONSE OF HISTORIC MASONRY	452
<i>Alexandra Scupin, Radu Vacareanu</i>	
APPLICABILITY OF RASPBERRY PI IOT DEVICE AS BACK UP PROTECTION DEVICE IN MEDIUM VOLTAGE POWER SYSTEMS.....	457
<i>Buddhika Priyashantha Kandamulla Arachchige, Mocanu Mariana, Catalin Petrescu, Claudiu Zafiu</i>	
NUMERICAL STUDY OF PERSONALIZED VENTILATION IMPACT ON OCCUPANT COMFORT IN ENCLOSED SPACES	462
<i>Matei-Razvan Georgescu, Ilinca Nastase, Mihnea Sandu, Amina Meslem, Florin Bode</i>	
ENERGY-EFFICIENT SOLUTION FOR SMART LIGHTING THROUGH IOT	467
<i>Vladimir Tanasiev, Horia Necula, Adrian Alistar, George Cristian Patru, Adrian Badea</i>	

Author Index