

# **2019 6th International Symposium on Electrical and Electronics Engineering (ISEEE 2019)**

**Galati, Romania  
18 – 20 October 2019**



**IEEE Catalog Number: CFP1993K-POD  
ISBN: 978-1-7281-2907-5**

**Copyright © 2019 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:	CFP1993K-POD
ISBN (Print-On-Demand):	978-1-7281-2907-5
ISBN (Online):	978-1-7281-2906-8

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# TABLE OF CONTENTS

<b>FINITE STATE PREDICTIVE TORQUE CONTROL WITH SWITCHING TABLE FOR INDUCTION MOTOR DRIVE</b> .....	1
<i>Nguyen Hoang Viet ; Nicolae Paraschiv</i>	
<b>MODELING OF PRE-UNIVERSITY EDUCATION UNITS ELECTRIC ENERGY CONSUMPTION</b> .....	7
<i>Sorin Orboiu ; Horia Andrei</i>	
<b>A DYNAMIC MODEL FOR AN ELECTRICAL CARGO SHIP</b> .....	13
<i>Gabriel Frangopol ; Cristinel Radu Dache</i>	
<b>A SOLUTION FOR REDUCING HARMONIC REGIME AND REACTIVE POWER ABSORBED BY A CYCLOCONVERTER</b> .....	19
<i>Gabriel Frangopol ; Cristinel Radu Dache</i>	
<b>COMPENSATING CAPACITOR VOLTAGE FUZZY HYSTERESIS CONTROL FOR A DIRECT CURRENT CONTROLLED ACTIVE FILTER</b> .....	25
<i>Constantin Vlad Suru ; Mihaela Popescu ; Mircea Dobriceanu</i>	
<b>ELECTRICAL EQUIPMENT SAFETY ANALYSIS AND SIMULATION: CASE STUDY: TRANSFORMER'S MALFUNCTIONS</b> .....	31
<i>Ioan Marinescu ; Sorin Deleanu ; Marilena Stanculescu ; Lavinia Bobaru ; Paul Andrei ; Horia Andrei</i>	
<b>THE ENERGETIC PERFORMANCES OF CONTROL AT CONSTANT MAGNETIC FLUX OF AN INDUCTION TRACTION MOTOR: PART 1 - PERFORMANCES OF CONTROL AT CONSTANT STATOR FLUX AND CONSTANT MAGNETIZING FLUX</b> .....	37
<i>Mihaita Linca ; Mihaela Popescu ; Alexandru Bitoleanu</i>	
<b>THE ENERGETIC PERFORMANCES OF CONTROL AT CONSTANT MAGNETIC FLUX OF AN INDUCTION TRACTION MOTOR: PART 2 - PERFORMANCES OF CONTROL AT CONSTANT ROTOR FLUX AND COMPARATIVE ANALYSIS</b> .....	43
<i>Mihaela Popescu ; Alexandru Bitoleanu ; Gheorghe-Eugen Subtirelu</i>	
<b>MODEL FREE CONTROL OF A 2DOF ROBOTIC ARM USING VIDEO FEEDBACK</b> .....	49
<i>Cristian Moldovan ; Valentin Ciupe ; Ion Crastiu ; Valer Dolga</i>	
<b>EXPERIMENTAL STUDY OF RADIATED COMPROMISING EMANATIONS FOR COMPUTER MONITORS</b> .....	54
<i>Valentin Velicu ; Alexandru Boitan ; Vlad Butnariu ; Bogdan Trip ; Mihai Iulian Rebican ; Valentin Ionita</i>	
<b>THE CAPACITOR VOLTAGE BALANCING PROBLEM IN FS-PTC FOR INDUCTION MOTOR FED BY 3L-NPC INVERTER</b> .....	58
<i>Nguyen Hoang Viet ; Nicolae Paraschiv</i>	
<b>ARTIFICIAL NEURAL NETWORKS DESIGNED TO IDENTIFY NBOME HALLUCINOGENS BASED ON THE MOST SENSITIVE MOLECULAR DESCRIPTORS</b> .....	63
<i>Adelina Ion ; Steluta Gosav ; Mirela Praisler</i>	
<b>LOGISTIC REGRESSION CLASSIFICATION MODEL IDENTIFYING DRUGS OF ABUSE BASED ON THEIR ATR-FTIR SPECTRA: CASE STUDY ON LASSO AND RIDGE REGULARIZATION METHODS</b> .....	69
<i>Catalin Negoita ; Mirela Praisler</i>	
<b>BCONV - ELM: BINARY WEIGHTS CONVOLUTIONAL NEURAL NETWORK SIMULATOR BASED ON KERAS/TENSORFLOW, FOR LOW COMPLEXITY IMPLEMENTATIONS</b> .....	73
<i>Radu Dogaru ; Ioana Dogaru</i>	
<b>MODELING, SIMULATION AND OPTIMIZATION OF DUAL-HEATING SYSTEM</b> .....	79
<i>Lucian Nastase ; Horia Andrei ; Emil Lungu ; Veronica Dulea ; Emil Diaconu</i>	
<b>ANALYSIS AND MODELING OF BIOMASS PLANT ENERGY EFFICIENCY</b> .....	87
<i>Alexandru Enescu ; Horia Andrei ; Valentin Ion ; Emil Diaconu ; Nicoleta Angelescu</i>	
<b>ANALYSIS OF CONCHOIDAL RADIATION COLLIMATORS AND SHIELDS</b> .....	93
<i>Horia-Nicolai Teodorescu</i>	
<b>SYSTEM FOR ACQUISITION OF ENERGY PARAMETERS FOR CONSUMERS WITHOUT ACCESS TO THE LOW VOLTAGE LINE</b> .....	99
<i>Mircea Dobriceanu ; Gheorghe-Eugen Subtirelu ; Mihaita Linca</i>	
<b>A STUDY ON THE IMPLEMENTATION OF HVDC FOR POWER SYSTEM INTERCONNECTION</b> .....	105
<i>Kieran Plihal ; Alvin Do ; Sorin Deleanu ; Horia Andrei ; Marilena Stanculescu ; Mihai Iordache</i>	

<b>THE EFFICIENCY OF AN UNDERWATER INDUCTIVE CHARGING SYSTEM FOR AUVS BASED ON TRUNCATED COILS</b> .....	111
<i>Georgiana Rosu ; Andrei Marinescu ; Gheorghe Samoilescu ; Octavian Baltag</i>	
<b>MONITORING AND DECISION MAKING SUPPORT SYSTEMS FOR ACTIVATED SLUDGE PROCESS</b> .....	117
<i>Sanda Florentina Mihalache ; Madalina Carbureanu</i>	
<b>TOWARD A MIXED VISIBLE LIGHT COMMUNICATIONS AND RANGING SYSTEM FOR AUTOMOTIVE APPLICATIONS</b> .....	123
<i>Catalin Beguni ; Sebastian-Andrei Avatamanitei ; Alin-Mihai Cailean ; Eduard Zadobrischi ; Mihai Dimian ; Hongyu Guan ; Luc Chassagne</i>	
<b>AN ANALYSIS OF SPECIFIC PARAMETERS REGARDING THE EXTRACTION OF CRUDE OIL WITH AN ELECTRIC DRIVEN PUMPING UNIT</b> .....	129
<i>Alexandru Savulescu ; Boris Siro ; Cornel Ianache</i>	
<b>FUZZY SPEED CONTROL IN DRIVE SYSTEMS WITH VOLTAGE INVERTERS AND INDUCTION MOTORS</b> .....	135
<i>Alexandru Bitoleanu ; Constantin Vlad Suru ; Mihaita Linca</i>	
<b>INDOOR VISIBLE LIGHT COMMUNICATIONS DEMONSTRATION: UNIVERSITY CAMPUS RADIO STATION TRANSMITTED THROUGH THE LIGHTING SYSTEM</b> .....	141
<i>Sebastian-Andrei Avatamanitei ; Alin-Mihai Cailean ; Adrian Done ; Alexandru Capitan ; Valentin Popa</i>	
<b>NOVEL SPOKE-TYPE FERRITE-MAGNET GENERATORS FOR MICRO-WIND POWER APPLICATIONS</b> .....	146
<i>Mircea M. Radulescu</i>	
<b>SIMULATION OF THE ELECTRIC DRIVE OF A BEAM PUMPING UNIT AND ITS COMPARATIVE ANALYSIS FOR DIFFERENT OPERATING FREQUENCIES</b> .....	152
<i>Alexandru Savulescu ; Boris Siro ; Cornel Ianache ; Liana Georgescu</i>	
<b>COMPARATIVE STUDY OF EXTREME LEARNING MACHINE USING VARIOUS COMPUTING PLATFORMS</b> .....	158
<i>Andrei Nour ; Ioana Dogaru ; Radu Dogaru</i>	
<b>ON NOISE ESTIMATION OF MIMO WIRELESS CHANNELS FOR LOW-COMPUTATIONAL IOT DEVICES</b> .....	162
<i>V. Nicolau ; M. Andrei</i>	
<b>QUASI-OPTIMAL CHARACTER OF METAHEURISTIC BASED ALGORITHMS USED IN CLOSED LOOP: EVALUATION THROUGH SIMULATION SERIES</b> .....	167
<i>Viorel Minzu</i>	
<b>COMPACT ISOLATED SPEECH RECOGNITION ON RASPBERRY-PI BASED ON REACTION DIFFUSION TRANSFORM</b> .....	173
<i>Ioana Dogaru ; Daniel-Cristian Stan ; Radu Dogaru</i>	
<b>OPTIMIZATION OF CONVOLUTIONAL NEURAL NETWORKS FOR FACE RECOGNITION PROBLEMS AIMED TO RESOURCES CONSTRAINED PLATFORMS</b> .....	177
<i>Iulian Felca ; Radu Dogaru</i>	
<b>INDOOR DRONE APPLICATION WITH ACOUSTIC LOCALIZATION</b> .....	181
<i>Ali Anil Demircali ; Egemen Balban ; Abdurrahman Yilmaz ; Gizem Melike Cidal ; Hüseyin Uvet</i>	
<b>INTELLIGENT PROTECTION OF A POWER SUPPLY SYSTEM FOR ELECTRIC CONSUMERS WITHOUT ACCESS TO THE LOW VOLTAGE LINE</b> .....	186
<i>Gheorghe-Eugen Subtirelu ; Mircea Dobricianu ; Constantin Vlad Suru</i>	
<b>UNDERSTANDING PEDESTRIAN BEHAVIOUR WITH POSE ESTIMATION AND RECURRENT NETWORKS</b> .....	192
<i>Anca Marginean ; Raluca Brehar ; Mihai Negru</i>	
<b>INTERFERENCE CHALLENGES ON BOARD MILITARY SHIPS</b> .....	198
<i>Vasile Solcanu ; Marian Gaiceanu ; Marius Solomon</i>	
<b>THE RESULTS OF THE ELECTROMAGNETIC FIELD MEASUREMENTS PERFORMED ON A MILITARY MARITIME SHIP TO DETERMINE THE EFFECTIVENESS OF A RADIO- ABSORBENT MATERIAL</b> .....	204
<i>Vasile Solcanu ; Alexandru Sotir ; Marian Gaiceanu ; Gheorghe Samoilescu ; Mircea Constantinescu</i>	
<b>CYBER-PHYSICAL SYSTEMS FOR INDUSTRIAL APPLICATIONS</b> .....	210
<i>Marian Gaiceanu</i>	
<b>MICROGRID POWER INFRASTRUCTURE FOR CRITICAL OPERATIONS</b> .....	213
<i>Iulian Ghenea ; Marian Gaiceanu</i>	
<b>ECG SIGNAL FILTERING IN FPGA</b> .....	219
<i>Rustem Popa</i>	
<b>MICROGRID OPTIMAL POWER FLOW FOR INCREASED SECURITY</b> .....	225
<i>Iulian Ghenea ; Marian Gaiceanu ; Razvan Buhosu</i>	

<b>INTELLIGENT MANAGEMENT OF THE HOT ROLLING MILL INFLUENCE OF THE AUTOMATION SYSTEM ON HOT ROLLING PARAMETERS</b> .....	231
<i>Marius Solomon ; Marian Gaiceanu ; Vasile Solcanu</i>	
<b>MANAGEMENT OF A PHOTOVOLTAIC-BATTERY-BASED MICROGRID IN A PROSUMER CONTEXT</b> .....	237
<i>Mateus Almeida Barbosa ; Kübra Gül ; Antoneta Iuliana Bratcu ; Iulian Munteanu</i>	
<b>A GENERAL APPROACH FOR CHANGE DETECTION IN VIBRATION SIGNALS WITH APPLICATION IN MACHINE HEALTH MONITORING</b> .....	243
<i>Theodor D. Popescu ; Dorel Aiordachioaie</i>	
<b>ASPECTS OF FEATURES SELECTION AND EXTRACTION FROM TIME-FREQUENCY IMAGES OF VIBRATION SIGNALS</b> .....	249
<i>Dorel Aiordachioaie ; Theodor D. Popescu</i>	
<b>ON HUMAN FACES THERMAL IMAGE PROCESSING FOR CLASSIFICATION PURPOSES</b> .....	255
<i>Dorel Aiordachioaie ; Anisia Culea-Florescu ; Sorin Marius Pavel</i>	
<b>REACTIVE POWER COMPENSATION FOR A PV PARK CONNECTED AT A LONG DISTANCE</b> .....	261
<i>Alexandru Dusa ; Ciprian Daniel Balanuta ; Gelu Gurguiatu ; Adrian-Valentin Niculcea</i>	
<b>THE INFLUENCE OF THE CONNECTING ELEMENTS OF THE THREE-PHASE SHUNT ACTIVE FILTERS - IN THE COMMON NETWORK CONNECTION POINT - ON THE EFFICIENCY OF THE FILTERING PROCESS</b> .....	266
<i>Ion Voncila ; Emil Mina Rosu ; Gelu Gurguiatu ; Ciprian Daniel Balanuta</i>	
<b>REACTIVE POWER COMPENSATION FOR CONSUMERS CONNECTED AT LONG-DISTANCES</b> .....	272
<i>Ciprian Daniel Balanuta ; Alexandru Dusa ; Gelu Gurguiatu ; Laurentiu Luca</i>	
<b>ACTIVE POWER FILTER CONTROL STRATEGY CHOOSING BY M-TOOL APPLICATION</b> .....	277
<i>Gelu Gurguiatu ; Ciprian Daniel Balanuta ; Alexandru Dusa ; Emil Mina Rosu ; Ion Voncila ; Mariana Alexandra ; Alexandra Anton</i>	
<b>DESIGN OPTIMIZATION OF ELECTRIC TRACTION UAVS</b> .....	283
<i>Gabriel Murariu ; Mihai Dragu ; Lucian Georgescu ; Bogdan Rosu ; Silviu Epure ; Ciprian Vlad</i>	
<b>PERSONAL SEISMOGRAPH SYSTEM - A FUNCTIONAL PROTOTYPE</b> .....	289
<i>Gabriel Murariu ; Ciprian Vlad ; Dan Munteanu ; George Danut Mocanu ; Silviu-Nicolae Iancu ; Violeta Cornelia Domnitanu ; Constantin Ionescu ; Razvan-Adrian Tudoran ; Silviu Epure</i>	
<b>SEGMENTATION AND MACHINE LEARNING TECHNIQUES APPLIED TO AUTOMATIC DETECTION OF DISEASES FROM EYE-FUNDUS RETINA IMAGES</b> .....	294
<i>Weingart Mircea</i>	
<b>UPDATING AN ELECTRIC PROPULSION UAV DEVICE FOR LONG RANGE MISSIONS</b> .....	300
<i>Gabriel Murariu ; Mihai Dragu ; Bogdan Rosu ; Silviu Epure ; Ciprian Vlad</i>	
<b>DISASTER MANAGEMENT SYSTEM</b> .....	306
<i>Gabriel Murariu ; Silviu Epure ; Dan Munteanu ; Ciprian Vlad ; Violeta Cornelia Domnitanu ; George Danut Mocanu ; Constantin Ionescu ; Razvan-Adrian Tudoran</i>	
<b>DESIGN STUDY CASE OVERVIEW FOR NAVAL POWER GENERATION AND DELIVERY</b> .....	312
<i>Mariana Dumitrescu</i>	
<b>CHANGE DETECTION IN EEG SIGNALS</b> .....	317
<i>Laurentiu Frangu ; Rustem Popa</i>	
<b>SAMPLE VALUE ORDERING FOR AUDIO REVERSIBLE DATA HIDING</b> .....	323
<i>Alin Bobeica ; Ioan Catalin Dragoi ; Ion Caciula ; Dinu Coltuc</i>	
<b>BACKGROUND NOISE IN RADIATION SENSORS AND CAMERAS WITH COLLIMATORS AND NOISE ECONOMIC IMPACT</b> .....	329
<i>Mike Horia Teodorescu ; Horia-Nicolai Teodorescu</i>	
<b>CONSUMPTION OPTIMIZATION ASPECTS IN RENEWAL ENERGY SYSTEMS USING ARTIFICIAL NEURAL NETWORK</b> .....	336
<i>Stefan Preda ; Razvan Cristian Marales</i>	
<b>RECENT ADVANCES IN ARTIFICIAL INTELLIGENCE</b> .....	343
<i>Iulian B. Ciocoiu</i>	
<b>FREQUENCY DOMAIN MODELS FOR NONLINEAR LOADS WITH FIRING ANGLE CONTROL DEVICES PART II - MODELING</b> .....	347
<i>Florin Roman Enache ; Florin Constantinescu ; Mihai Rata ; Gabriel Vataselu ; Valentin Stefanescu ; Dan Milici ; Iulian Arama</i>	
<b>ROUTE PLANNING STRATEGY FOR SMART TOURISM SERVICES DEVELOPMENT</b> .....	353
<i>Mihai Pop ; Camelia Avram ; Claudiu Domuta ; Dan Radu ; Adina Astilean</i>	
<b>Author Index</b>	