

2021 7th International Symposium on Electrical and Electronics Engineering (ISEEE 2021)

**Galati, Romania
28 – 30 October 2021**



**IEEE Catalog Number: CFP2193K-POD
ISBN: 978-1-6654-3800-1**

**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:	CFP2193K-POD
ISBN (Print-On-Demand):	978-1-6654-3800-1
ISBN (Online):	978-1-6654-3799-8

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
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

PLENARY SESSIONS

Strategic Directions of Application Research in Electrical Engineering on the Horizon 2050.....	N/A
Current Standards and Regulations for Wireless Battery Charging Systems.....	1
New Achievements in the Rotor Field-Oriented Control for Autonomous Locomotives	
Part 2: Control Implementation and Experimental Performances at Low Speed.....	7

TECHNICAL SESSION 1

TS1 - Power Electronics and Electrical Drives I

Mihaela POPESCU, Alexandru BITOLEANU - New Achievements in the Rotor Field-Oriented Control for Autonomous Locomotives.....	15
Constantin Vlad SURU, Mihaela POPESCU, Mihaita LINCA, Mircea DOBRICEANU – Control Implementation for Battery Charging in Autonomous Locomotive on dSPACE 1104 DSP Board	21
Alexandru SAVULESCU - Study of an objective function of the energetic parameters for the electric drive of a beam pumping unit.....	27
Alexandru SAVULESCU - A possibility of energy recovery in the electric drive of crude oil pumping units	33
Alexandru DUSA, Emil Mina ROSU, Silviu Ionut EPURE, Razvan Constantin SOLEA, Marian GAICEANU, Liviu Sorin ARSENE - Improving the power quality using the Active Power Filter. Experimental results	39

TECHNICAL SESSION 2

TS2 - Data & Signal Processing

Speranta Cecilia BOLEA - Implementation of an Algorithm for Automatic Segmentation of Texts based on Stylographic Analysis	44
Horia Nicolai TEODORESCU, Marius HAGAN - Correlational Analysis of Foot Plantar Pressure Signals	50
Horia Nicolai TEODORESCU - Noise Equilibrium Frequency as a Measure of the Low Noise Devices Quality Involves the Lambert Function.....	56
Marius Sorin PAVEL, Rustem POPA - An algorithm for pseudocoloring images in FPGA	62
Simona Vasilica OPREA, Adela BARA, Gabriela DOBRITA - Big Data Solutions for Extracting Load Flexibility Potential and Assessing Benefits.....	66
Bogdan IONESCU, Marian CRACIUN, George PETREA, Silviu EPURE, Catalin Petrica ARAMA, Ciprian VLAD - Health home-monitoring system based on IoT	72

TECHNICAL SESSION 3

TS3 - Power Electronics and Electrical Drives II

Emil CAZACU, Marian BARBU, Lucian PETRESCU - Inrush current and ferroresonance in low-voltage networks – An integral approach.....	78
Marius DRANCA, Mihai CHIRCA, Stefan BREBAN, Daniel FODOREAN - Comparative Design Analysis of Two Modular Permanent Magnet Synchronous Generators	82
Marius George SOLOMON, Marian GAICEANU - The Optimization of the Dynamic Regime of the Asynchronous Vectorial AC Motor in Flying Shear	87

Cristinel Radu DACHE, Silviu Ionut EPURE, Alexandru DUSA, Razvan Constantin SOLEA, Marian GAICEANU, Constantin DROGEANU - The influence of the type of connection of the filter coils on the efficiency of the filtration process.....	93
Razvan BUHOSU, Marian GAICEANU, Razvan Constantin SOLEA, Iulian GHENEA , Marius George SOLOMON - Non-linear control of 2WS vehicles	98
TECHNICAL SESSION 4	
TS4 - Automatic Control and Power Systems	
Viorel MINZU, George Adrian IFRIM - Optimal Control of Microalgae Growth in Artificially Lighted Photobioreactors Case study: closed-loop solution for a bilocal optimization problem ...	102
Firat BILGIN, Musa ALCI - Generating Z-number by Logistic Regression	109
George PETREA, Viorel NICOLAU, Mihaela ANDREI - On controller integration for electrostatic precipitator.....	115
Mariana DUMITRESCU - Electric Power Supply Fault Tolerant Analysis for a Naval System ..	119
Daniel GANEA, Ciprian VLAD - The potential of renewable energies in Romania	123
TECHNICAL SESSION 5	
TS5 - Electromagnetic Compatibility and Electrical Engineering Tools	
Laura ANDREI, Florin CIUPRINA, Elena Ruxandra RADU, Augusta Raluca GABOR, Denis Mihaela PANAITESCU - Dielectric performances of LSR-SiO ₂ nanocomposites for wearable antennas substrate.....	128
Valentin NAE, Iancu CIOCIOI, Gheorghe SAMOILESCU, Adelina Rodica BORDIANU - Electromagnetic compatibility of radiocommunication equipment on board a ship	133
Adelina Rodica BORDIANU, Gheorghe SAMOILESCU, Iancu CIOCIOI, Valentin NAE - Electromagnetic shielding for the protection of the human factor on board a ship.....	139
Ion VONCILA, Ion PARASCHIV, Madalin COSTIN - The Influence of Saturation on the Performance of PMSM.....	145
Marian COSTEA, Tudor LEONIDA - Radiofrequency Disturbances produced by Insulators Strings in wet Conditions.....	151
George PETREA, Viorel NICOLAU, Mihaela ANDREI - On controller integration for electrostatic precipitator.....	N/A
TECHNICAL SESSION 6	
TS6 - Power Systems and Software Engineering	
Horia ANDREI, Emil DIACONU, Andrei GHEORGHE, Marilena STANCULESCU, Radu PORUMB, George SERITAN, Paul ANDREI, Nicu BIZON, Alin MAZARE, Laurentiu IONESCU, Marian GAICEANU, Sorin DELEANU - Energy Consumption, Pandemic Period and Online Academic Education: Case Studies in Romanian Universities	155
Valentin ION, Horia ANDREI, Emil DIACONU, Dan PUCHIANU, Andrei Cosmin GHEORGHE -Modelling the electrical characteristics of video surveillance systems.....	161
Valentin ION, Horia ANDREI, Emil DIACONU, Dan PUCHIANU, Mihaita Nicolae ARDELEANU - Modelling of Electrical Characteristics for an Anti-Theft Alarm System	165
Ionut CRAIU, Emil Mihai DIACONU, Liviu OLTEANU, Simona MIHAI, Mihaita Nicolae ARDELEANU - Study of the possibility of transferring thermal energy by conduction through a solid substance, in concentrated solar power systems	169
Valentin ION, Horia ANDREI, Emil DIACONU, DAN PUCHIANU, Andrei Cosmin GHEORGHE - Cost and energy consumption analysis of residential security systems	173
ADDITIONAL PAPER	
Djamel IKNI, Elena RADUCAN - Comparative Study Between the Flatness-Based and Field-Oriented Control of a Wind-Energy System	177
AUTHOR INDEX	