

The 15th International Conference on Engineering of Modern Electric Systems

*IEEE Technically Co-Sponsored conference, #46864, organized in
cooperation with Romania Section CAS/CS Joint Chapter*

Conference Technical Program

**Oradea, Romania
13 – 14 June 2019**

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• *Electronics and Telecommunications Session*

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• *Computer Science and Control Systems Sessions* Prof. Prof. Helga Silaghi -
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Valentin Năvrăpescu, University Politehnica of Bucharest, Romania
Radu Porumb, University Politehnica of Bucharest, Romania

Computer Science and Control Systems Session

Mihail Abrudean, Technical University of Cluj-Napoca, Romania
Angelica Bacivarov, University Politehnica of Bucharest, Romania
Valentina Balas, "Aurel Vlaicu" University of Arad, Romania
Eugen Bobașu, University of Craiova, Romania
Dumitru Dan Burdescu, University of Craiova, Romania
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Lorand Szabo, Technical University of Cluj Napoca, Romania
Janos Sztrik, University of Debrecen, Hungary
Honoriu Vălean, Technical University of Cluj-Napoca, Romania

Electronics and Telecommunications Session

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Daniel Trip, University of Oradea, Romania

**The 15th International Conference on Engineering of Modern
Electric Systems Oradea, Romania, 13 – 14 June 2019**

BRIEF PROGRAMME

All conference activities will take place at Hotel Continental Forum Oradea.

Thursday, 13 June, 2019

12:30 – 14:00 Registration

14:00 – 14.50 Opening session – welcome address, *Room: Paladium*)

15:00 Oral presentations (Rooms: *Paladium, Forum, Prezident and Panoramic*)

16:40 – 17:00 Coffee break

17:40 Oral presentations (Rooms: *Paladinum, Forum, Prezident and Panoramic*)

20:00 Gala Dinner

Friday, 14 June, 2019

09:00 Oral presentations (Room: *Paladium*)

10:40 – 11:00 Coffee break

11:00 Oral presentations (Room: *Paladium*)

**The 15th International Conference on
Engineering of Modern Electric Systems Oradea,
Romania,
13-14 June 2019**

PROGRAMME

Thursday, June 1th, 2017	<i>All conference activities will take place at Hotel Continental Forum Oradea.</i>
12.30 – 14.00	Registration – Room: Paladium
14.00 – 14.50	Opening session – welcome address – Room: Paladium Invited Speaker - Constantin Vertan, Politehnica University of Bucharest, Romania - Joint color-thermal imaging as diagnostic aid for burn assessment
15:00	Oral Sessions
20:00	Gala Dinner at Hotel Continental Forum Oradea.

Thursday, June 13, 2019

15.00 – Oral presentations (Rooms: Paladium, Forum, Prezident and Panoramic)

Session Electrical Engineering, series 1 – Room Paladium

(Thursday, June 13, 2019, 15.00 – 20:00)

Oral presentations

Chairs: Francisc Ioan Hathazi and Mircea Arion

ID	Schedule	Authors	Paper title
61	15:00 – 15:20	Catalin Ionut Grumeza, Livia Bandici, Paul Cristian Andrei, Mihai Maricarur and Florea Ioan Hantila	Assesment Procedures of the Magnetic Flux Null Value Through a Magnetic Circuit Branch
21	15:20 – 15:40	Andreas Michaelides, Thanos Nicolaou, Dimitris Afxentiou and Vijayakrishna Satyamsetti	An Adjustable Integrated Inductive Capacitive Component to Compensate Reactive Power
26	15:40 – 16:00	Lavinia Bobaru, Marilena Stanculescu, Sorin Deleanu, Mihai Iordache, Dragos Niculae and Victor Bucata	Using S Parameters in Two-Port Circuit Analysis

47	16:00 – 16:20	Beatrice Arvinti, Dumitru Toader and Marius Costache	Frequency Correlated Filtering for Ambulatory Electrocardiograms
43	16:20 – 16:40	Muhyaddin Rawa	Predicting Solar Insolation and Energy Harvest of PV Modules in Saudi Arabia
16:40 – 17:00 Coffee break (near the room Paladium)			
05	17:00 – 17:20	Marcela Man Dietrich, Marcel Sabin Popa, Diana Sas, Zoltan Kovendy and Eugen Ioan Gergely	Implementation of the Quality Management System in the Matlab Software
23	17:20 – 17:40	Gheorghe Emil Bandici, Livia Bandici, Simona Vicaş and Alin Teuşdea	Pulsed Electric Field Treatments for Improving the Colour of Red Grape Products
54	17:40 – 18:00	Teodor Leuca, Simina Coman, Nistor Daniel Trip, Livia Bandici, Marius Codrean and Marcel Perte	Neural Network Modeling of a Drying Process in Radio Frequency Field
62	18:00 – 18:20	Claudia Olimpia Staşac, Dorel Anton Hoble, Liviu Moldovan and Traian Costea	Analysis of Contact Resistance Variation in Electric Devices Under Electric Charge
53	18:20 – 18:40	Monica Popa and Sorin Paşca	The study of Inhomogeneities Effect on the Insulation of a Power Cable
27	18:40 – 19:00	Laurentiu Copil, Francisc - Ioan Hathazi, Mircea - Nicolae Arion, Vasile - Darie Soproni, Carmen Otilia Molnar and Mircea Danut Pantea	Production of Silicon Carbide in a High Frequency Electromagnetic Field. Measuring Thermal Conductivity
28	19:00 – 19:20	Mihaela Covaciu, Francisc - Ioan Hathazi, Mircea - Nicolae Arion, Vasile - Darie Soproni, Carmen Otilia Molnar and Marius Codrean	Decontamination, Drying and Sterilization Assisted by the High Frequency Electromagnetic Field For The Processing of Construction Waste Used on Driveways
30	19:20 – 19:40	Iulia Naghiu, Cornelia Gordan, Ioan - Mircea Gordan, Ovidiu Novac, Laurentiu Copil and Cristian Vancea	Extraction of Volatile Pumpkin Oils through Cold Pressing versus Microwave Field - Features, Composition and Differences

34	19:40 – 20:00	Vasile-Darie Soproni, Carmen Otilia Molnar, Francisc Ioan Hathazi, Mircea-Nicolae Arion, Marius Codrean and Liviu Moldovan	Experimental Research on Microwave Field and Hot Air Drying of Barley Seeds
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***Session Computer Science and Control Systems, series 1 – Room
Panoramic (Thursday, June 13, 2019, 15:00 – 18:40)***

Oral presentations

Chairs: Mirela Pater and Daniela Popescu

ID	Schedule	Authors	Paper title
52	15:00 – 15:20	Aneta George and Voicu Groza	Information Analytics System Database for Uniform Approach to Continuous Engineering Program Improvement
39	15:20 – 15:40	Brendon Kovacs	Autonomous Line Maze Solver Using Artificial Intelligence
15	15:40 – 16:00	Vlad Fireteanu	Risk Assesment Parameters for Internet of Things Projects
14	16:00 – 16:20	Aldrin Vaz, C Gurudas Nayak and Dayananda Nayak	Hamming Code Performance Evaluation using Artificial Neural Network Decoder
40	16:20 – 16:40	Mircea-Petru Ursu, Ovidiu-Constantin Novac, Mihai Oproescu, Gyöngyi Bujdosó and Francisc Ioan Hathazi	Comparative Study of the Analog and Digital Operation for Miniature Railway Systems
16:40 – 17:00 Coffee break (near the room Paladium)			
19	17:00 – 17:20	Raluca Marina Sferle and Elisa Valentina Moisi	Automatic Number Plate Re- cognition for a Smart Service Auto
57	17:20 – 17:40	Alexandrina-Mirela Pater, Stefan Vari-Kakas, Otto Poszet and Ionel Gabriel Pintea	Segmenting Users of an Online Store Using Data Mining Techniques
16	17:40 – 18:00	Gergő Zilizi and Anett Rácz	Challenges of Developing Mobile Versions for High Performance Desktop VR Applications
38	18:00 – 18:20	Damaris Madar and Elisa Valentina Moisi	Semantic Similarities for Projects and Freelancers Profile Matching
32	18:20 – 18:40	Naomi Estera Costea and Elisa Valentina Moisi	Fingerprint Authentication for Budget Application

**Session Computer Science and Control Systems, series 2 – Room Prezident
(Thursday, June 13, 2019, 15:00 – 20:00)**

Oral presentations

Chairs: Helga Silaghi and Viorica Spoială

ID	Schedule	Authors	Paper title
17	15:00 – 15:20	Claudiu Costea, Helga Silaghi, Zoltan Kovendi and Gabriela Tont	Real Time Determination of Instantaneous Power Flow from Three-phase Electrical Circuits in Nonsymmetric Situations by Using ACE2000
03	15:20 – 15:40	Sorin Iulian Cosman, Cristina Adina Bilațiu and Claudia Steluta Martis	Development of an Automated System to Monitor and Control a Greenhouse
08	15:40 – 16:00	Flaviu Ionut Birouas and Radu Catalin Tarca	Development and Testing of a Mixed Feedback Control System for Robotic Hand Exoskeleton
51	16:00 – 16:20	Sorin Deleanu, Mihai Iordache, Marilena Stanculescu and Dragos Niculae	The Induction Machine Operating from a Voltage Supply, Unbalanced and Polluted with Harmonics: A Practical Approach
13	16:20 – 16:40	Tiberiu Colosi, Diana Sas, Marcela Man Dietrich, Iulia Clitan, Zoltan Kovendi and Laura Coroiu	Extension of MpdX Matrix for upper order Partial Differential Equations with two Independent Variables and Approximating Solutions
16:40 – 17:00 Coffee break (near the room Paladium)			
35	17:00 – 17:20	Gabriela Tont, Dan George Tont, Claudiu Costea and Zoltan Kovendi	Multi-Stage Fuzzy Approach of Stochastic Events Impact on Dependable Systems
24	17:20 – 17:40	Iulia Clitan, Zoltan Kovendi, Vlad Muresan, Mihail Abrudean and Eugen Ioan Gergely	Discrete Modeling and Control of an Industrial Robot used in a Metallurgical Process
44	17:40 – 18:00	Adrian Codoban, Helga Silaghi, Mihail Ioan Abrudean and Maria Gamcova	Inspection Robot for Tightly and Hard to Reach Spaces
33	18:00 – 18:20	Andreea Nicorici, Iulia Vascan, Ion Barsan and Claudia Martis	Design and Analysis of a Surface Permanent Magnet Synchronous Machine for Automotive Applications

50	18:20 – 18:40	Liliana Marilena Matica, Laura Coroiu and Gavril Zaica	Numerical Images Analyze for Quality Control
42	18:40 – 19:00	Ioana Nasui-Zah, Anton-Horatiu Tamas and Claudia-Steluta Martis	Impact of saturation and cross-saturation on SynRM's dynamic model
45	19:00 – 19:20	Mihail Ioan Abrudean, Mihaela-Ligia Ungureșan, Helga Silaghi, Vlad Mureșan and Adrian Codoban	Experimental Identification of the ¹³ C Isotope Separation Process by Cryogenic Distillation on a Two-Column Separation Cascade
48	19:20 – 19:40	Eveline Ecsedi, Eduard Mihok, Helga Silaghi and Viorica Spoiala	The Development of an Autonomous Maze Robot
12	19:40 – 20:00	Nicolae Patrascoiu and Cosmin Rus	Traffic Signal Controller Implemented Through a Virtual Instrument

***Session Electronics and Telecommunications – Room Forum
(Thursday, June 13, 2019, 15:00 – 19:40)***

Oral presentations

Chairs: Cornelia Emilia Gordan and Nistor Daniel Trip

ID	Schedule	Authors	Paper title
11	15:00 – 15:20	Mihai Oproescu, Gabriel-Vasile Iana, Nicu Bizon, Ovidiu Constantin Novac and Mihaela Cornelia Novac	Software and Hardware Solutions for using the Keyboards by Blind People
20	15:20 – 15:40	Gabriel Iana, Mihai Oproescu, Nicu Bizon, Ovidiu-Constantin Novac and Novac Mihaela	Surface Scanning Device Using Ultrasound Transducers
49	15:40 – 16:00	George Suci, Ioana Marcu, Cristina Mihaela Balaceanu, Marius Dobrea and Elena Botezat	Efficient IoT system for Precision Agriculture
46	16:00 – 16:20	Cornel Balint, Aldo De Sabata and Andrei Silaghi	Application of a Probabilistic Model to High Frequency Spectrum Occupancy
18	16:20 – 16:40	Nagy Robert-Bela	General Considerations for Realizing a New Subclass of SoC

16:40 – 17:00 Coffee break (near the room Paladium)			
56	17:00 – 17:20	Ioan Gavriliuț, Laviniu Tepelea and Alexandru Gacsádi	Indoor Localization Method Based on the Sound Signal - An Experimental Setup
58	17:20 – 17:40	Lavinia Tepelea, Ioan Buciu, Cristian Grava, Ioan Gavriliuț and Alexandru Gacsádi	A Vision Module for Visually Impaired People by Using Raspberry PI Platform
60	17:40 – 18:00	Adrian Șchiop	Control Methods for Five Level Inverter
66	18:00 – 18:20	Mihaela Codrean, Marius Codrean, Mihaela Cornelia Novac, Ovidiu Constantin Novac, Cornelia Gordan and Valentin Ioan Farcaș	Analyzing the Process of Tempering a Semifinished Product Using the FLUX2D and FEMM Software
67	18:20 – 18:40	Sorin Popa and Nistor Daniel Trip	Measurements with a Quad Band Field Monitor System for UMTS/LTE/WLAN Communications
68	18:40 – 19:00	Arpad Incze and Ovidiu Constantin Novac	Enhancing the Cryptographic Strength of the LSB Steganographic Method with Pixel Sieving
69	19:00 – 19:20	Florin Constantinescu, M. Rata, F. R. Enache, G. Vataselu, Valentin Stefanescu, D. Milici and Iulian Nicusor Arama	Frequency Domain Models for Nonlinear Loads with Firing Angle Control Devices
06	19:20 – 19:40	Razvan-Daniel Albu and Cornelia Emilia Gordan	Authentication and Recognition, Guarantor for On-Line Security

Thursday June 13, 2019, 20:00 Gala Dinner – Restaurant, Hotel Continental Forum Oradea

Friday, June 14, 2019

09.00 – Oral presentations (Room: Paladium)

Session Electrical Engineering, series 2 – Room Paladium (Friday, June 14, 2019, 09.00 – 13:00)

Oral presentations

Chairs: Francisc Ioan Hathazi and Mircea Arion

ID	Schedule	Authors	Paper title
55	09:00 – 09:20	Laurentiu Copil, Francisc - Ioan Hathazi, Mircea - Nicolae Arion, Vasile - Darie Soproni, Carmen Otilia Molnar and Mihaela Covaciu	About the Use of High Frequency Ceramic Susceptors for Industrial Applications
29	09:20 – 09:40	Mihaela Covaciu, Francisc - Ioan Hathazi, Mircea - Nicolae Arion, Vasile - Darie Soproni, Carmen Otilia Molnar and Ovidiu Popovici	Determining the Potential for Recovery, Reuse and Recycling of Construction and Demolition Waste Assisted by High Frequency Electromagnetic Field
31	09:40 – 10:00	Iulia Naghiu, Teofil - Ovidiu Gal, Radu - Dimitrie Sebesan, Gianina Gabor, Cristian Vancea and Laurentiu Copil	Extracting Essential Oils from the Rosehips in the Microwave Field
07	10:00 – 10:20	Andrei Vulpe, Ovidiu Moldoveanu, Ciprian Lupu and Catalin- Dumitru Petrescu	Vehicle-Integrated Photovoltaic Modules – Design Considerations and Control Structures
09	10:20 – 10:40	Duc-Lich Luu, Ciprian Lupu and Doinița Chiriță	Design and Development of Smart Cars Model for Autonomous Vehicles in a Platooning
10:40 – 11:00 Coffee break (near the room Paladium)			
22	11:00 – 11:20	Livia Bandici, Geanina Silviana Banu, Anton Ficai and Denisa Ficai	The Role of Susceptors in the Process of Obtaining Nanopowders using Microwaves
36	11:20 – 11:40	Tibor Gergo Fodor, Alexandru M. Silaghi and Istvan N. Veber	A Practical Approach of Design and Construction of a 100A Welding Inverter

37	11:40 – 12:00	Istvan Norbert Veber, Alexandru M. Silaghi and Tibor Gergo Fodor	Design and Implementation of a Low Power Induction Heater
41	12:00 – 12:20	Livia Bandici, Geanina Silviana Banu, Anton Ficai and Denisa Ficai	Obtaining SiO ₂ Nanopowders Using Microwave Field Processing
59	12:20 – 12:40	Adriana-Marcela Grava and Cristian Grava	Bond-graph Modeling of an Electric Thermogenerator
70	12:40 – 13:00	Iulian Nicusor Arama, Marian Gaiceanu, Valentin Stefanescu	Management of the Electric Energy Distribution Network

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