



7th International Conference on Modern Power Systems



P R O G R A M M E

Cluj-Napoca, Romania | 6-9 June 2017

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Welcome to MPS 2017

It is with great pleasure that the Technical University of Cluj-Napoca welcomes you to the 7th International Conference on Modern Power Systems (MPS 2017), to be held in Cluj-Napoca, Romania, from 6th to 9th June, 2017. MPS has been established in 2006 as an international conference that provides a major forum for scientists, young researchers, PhD students and engineers to present, review and discuss the latest developments in electrical power engineering.

The Local MPS Organizing Committee is very pleased to welcome friends and colleagues, both senior and new, to Cluj-Napoca, in 2017. Given the major provocations now facing the electrical power industry and the energy sector in general, this conference provides an excellent start-up for talented young engineers and researchers to discuss some of these challenges. Also, the conference will provide the opportunity to meet specialists in these areas, old friends and become more informed about the new trends in electrical power engineering.

We must proudly underline that our MPS 2017 conference is technically co-sponsored by IEEE Romanian Section and it is included in the IEEE meetings database as conference record #41260.

After a two-stage review process, performed by an international referees' committee, a final technical programme incorporating more than 100 papers has been established. All presented papers at the Conference will be preserved as conference proceedings and archived on IEEEExplore database for ongoing reference by the power engineering community. The Local Organizing Committee has made every effort to ensure that your stay in Cluj-Napoca is both professionally and socially enjoyable. We have arranged several events including a Welcome Cocktail at the Chios Restaurant and the Conference Gala Dinner at Sun Garden Resort, a lost paradise in the middle of the forest.

The organization of MPS 2017 has been supported by the dedicated efforts of the Local Organizing Committee, the International Steering Committee and many colleagues from prestigious Romania universities. The conference has also been enhanced by the participation of our patrons, our supporters and exhibitors, for whom many thanks are due. The Local Organizing Committee is very grateful to our invited speakers, and last but not least to the Authors for their effort and high quality of the communications presented.

The organizing team and I, wish you a very pleasant and fruitful stay in Cluj-Napoca at MPS 2017!

prof.dr.eng. Călin MUNTEANU, Chairman of MPS 2017

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Conference Information

Conference Date and Venue

6 to 9 June 2017

Grand Hotel Napoca (4*), Octavian Goga str. no. 1, Cluj-Napoca

Tel. +40 264 580 715

Registration

Registration will be opened at Grand Hotel Napoca on Tuesday 16⁰⁰ – 19⁰⁰
And on Wednesday and Thursday between 09⁰⁰ – 17⁰⁰

Social Programme

Welcome Cocktail

Tuesday, 6th of June 2017

19³⁰ – 23⁰⁰

Welcome cocktail will be held at Chios Restaurant located in the central park of Cluj (10 min walk from Grand Hotel Napoca)

<http://chios.ro>



Conference Banquet

Thursday, 8th of June 2017

19⁰⁰ – 24⁰⁰

Conference Banquet will be held at SunGarden Resort located about 10 km away from Cluj-Napoca. Busses will be available from Grand Hotel Napoca for attending the event. Latest information will be available at the conference desk.

<https://sungardenresort.ro>



Program at a Glance

		Room ATENA	Room VIENA	Room FOAYER
June 7	10 ⁰⁰ -10 ³⁰	Opening Ceremony		
	10 ³⁰ -12 ³⁰	Plenary Session		
	13 ⁰⁰ -14 ⁰⁰	Poster Session 1 – Main Hall T1 + T2 + T3 + T4 + T5		
	15 ⁰⁰ -16 ³⁰	Oral Session 1 T1	Oral Session 2 T6	
	16 ⁴⁵ -18 ¹⁵	Oral Session 3 T2	Oral Session 4 T4	
June 8	08 ⁴⁵ -10 ¹⁵	Oral Session 5 T3+T10	Oral Session 6 T13	
	10 ³⁰ -12 ⁰⁰	Oral Session 7 T7+T8	Oral Session 8 T12+T14	
	12 ⁰⁰ -13 ⁰⁰	Poster Session 2 – Main Hall T6 + T7 + T9 + T13 + T14 + T15		
	14 ⁰⁰ -17 ⁰⁰	Round Table 1	Round Table 2	Round Table 3
June 9	10 ³⁰ -11 ⁰⁰			Closing Ceremony

- T1 Analysis, Modelling, Simulation and Optimal Design in Power Systems
- T2 Distribution Systems and Dispersed Generation
- T3 Education in Electrical and Power Engineering
- T4 Electric Machines and Drives
- T5 Electricity Markets and Regulation
- T6 Electromagnetic Compatibility, Power Quality and Environmental Impacts
- T7 Electromagnetics
- T8 High Voltage Equipments and Materials
- T9 HVDC and Power Electronics
- T10 Informatics and Telecommunications in Power Systems
- T11 Overhead Lines, Insulated Cables and Substations
- T12 Protection and Automation
- T13 Renewable Energy
- T14 Smart Grids
- T15 Transmission Systems Operation, Control and Development

Keynote Speakers

Will the Lights Stay On?

**Prof. Ghanim Putrus, Northumbria University,
Newcastle upon Tyne, UK**



Putrus Ghanim leads the Power and Wind Energy Research group at the Faculty of Engineering and Environment, Northumbria University. He has over 25 years of research experience with over 150 publications, including one patent, and has given several invited talks at national and international events. He has led several research projects and has often provided consultancy for industry.

Prof Putrus is Associate Editor for Elsevier Renewable Energy journal and serves on the technical/steering committees for several conferences. He is involved in the Institution of Engineering Technology (IET) professional activities and served on the executive committee of the IET Power Trading and Control Professional Network (2001-2009). His main research interests are the application of power electronics in power systems, power quality, integration of renewable energy resources and electric vehicles into power distribution networks (smart grids).

Modelling and management of active electric distribution networks



Prof. Roberto Turri, Università degli Studi di Padova, Italy

Roberto Turri was born in Padova, Italy, in 1958. He received the Dr. Ing. degree in electrical engineering from the University of Padova, Padova, Italy, in 1984 and the Ph.D. degree from the University of Wales in 1987. He was with the Physics Department of the University College of Swansea, Wales U.K. In 1990, he joined the Electrical Engineering Department of Padova University, where he is Associate Professor in Power Systems.

Prof. Turri has over 25 years of research experience with more than 150 publications and has given several plenary speeches at national and international events. His main research interests are in the fields of power system analysis and simulation, smart grids, energy storage systems, assessment and mitigation of human exposure to low frequency electromagnetic fields.

Evolution of Powertrains for Urban Vehicles

Prof. Alecksey Anuchin, Moscow Power Engineering Institute, Russia

Alecksey Anuchin received the BSc, MSc and PhD degree from Moscow Power Engineering Institute has 20 years of experience covering control systems of electric drives, hybrid powertrains and real-time communications.

He is author of two textbooks on design of real-time software for microcontroller of C28 family and control system of electric drives (in Russian). He published more than 70 conference and journal papers. He delivers lectures on “Control Systems of Electric Drives”, “Real-time Software Design”, “Electric Drives” and “Science Research Writing” in Moscow Power Engineering Institute. He is in a position of head of Electric Drives Department for last 5 years.

Prof. Anuchin works in R&D Company Vector for 20 years from the position of programmer, when he was 3rd year BSc student, to CEO. He has many successful projects and designed control system for switched-reluctance drives, for inverter-fed nickel alloy electric furnace, for power supplies of trains and subway trains, for high-speed spindle drives, and supervised the projects of serial hybrid vehicle, fully electric bus and shuttle bus.



Wednesday, 7th of June

10⁰⁰ – 12³⁰

ROOM: ATENA

Opening Ceremony

10⁰⁰ – 10³⁰ **Welcome and Introduction**
Calin Munteanu, Conference Chair

Plenary Session

Session Chair: Dan D. Micu

10³⁰ – 11⁰⁰ **Will the Lights Stay On?**
Keynote speaker: Ghanim Putrus, Northumbria University, Newcastle upon Tyne (UK)

11⁰⁰ – 11³⁰ **Modelling and Management of Active Electric Distribution Networks**
Keynote speaker: Roberto Turri, Universita degli Studi di Padova (Italy)

11³⁰ – 12⁰⁰ **Evolution of Powertrains for Urban Vehicles**
Keynote speaker: Alecksey Anuchin, Moscow Power Engineering Institute (Russia)

12⁰⁰ – 12³⁰ **Smart Metering Solutions in Electricity Grids**
Invited speakers: Calin Veltan, Vasile Gabriel Pop, Mircea Bica, ELECTROGRUP (Romania)

Wednesday, 7th of June

13⁰⁰ – 14⁰⁰

POSTER SESSION 1

ROOM: MAIN HALL

**Analysis, Modelling, Simulation and Optimal Design in
Power Systems**

Session Chairs: Sorin Pavel, Marius Purcar

- 028 Effects of Outliers on Calculation of Load Profile Factors**
Bogdan Constantin Neagu, Gheorghe Grigoras, Florina Scarlatache*
- 044 SCADA/EMS System Implemented at SDEE Transilvania Nord S.A.**
Lucian Calugar, Constantin Buda, Sorin Chis*
- 087 Load Flow Analysis in a 110/20 kV Romanian Substation**
Stefan Florin Braicu, Levente Czumbil, Dan Doru Micu, Denisa Stet, Andrei Ceclan, Hassan Nouri, Emil Simion*
- 096 Study and Optimization of Electromagnetic Field in a Vacuum Interrupter**
Bogdan Mociran, Amalia Verde, Raluca Oglejan, Alex Avram*
- 103 Numerical Analysis of Electro-Thermal Behavior and Optimization of the Cooling System in Electronic Power Devices using CAD/CAE Tools**
Alex Avram, Adrian Bojita, Marius Purcar, Calin Munteanu*
- 115 Numerical Modeling of Moving Inclusions in Electric Models using eXtended Finite Element Method**
Raluca Oglejan, Bogdan Mociran*
- 132 Optimal Design of Vertical Earth Grounding with Rectangular Perimeter**
Virgil Maier, Sorin Pavel, Horia Beleiu, Constantin Sorin Pica*
- 144 Internal model control for MPPT of a Solar PV system**
Cosmin Darab, Antoniu Turcu*

Wednesday, 7th of June

13⁰⁰ – 14⁰⁰

POSTER SESSION 1

ROOM: MAIN HALL

Distribution Systems and Dispersed Generation

Session Chairs: Sorin Pavel, Marius Purcar

034 Meter Accuracy Selection in RES-based Prosumer Nodes

Dorel Stanescu, Carmen Stanescu, Mihaela Albu, Mihai Sanduleac*

047 Contributions to a Grid Connected Distributed Renewable Energy System, in Distinctive Operation Modes

Karoly Ronay, Dorin Bica, Lucian Dulau*

Wednesday, 7th of June

13⁰⁰ – 14⁰⁰

POSTER SESSION 1

ROOM: MAIN HALL

Education in Electrical and Power Engineering

Session Chairs: Sorin Pavel, Marius Purcar

094 Power Factor Compensation using OrCAD Simulation. A New Approach in Teaching Electrical Engineering
Mihaela Cretu, Laura Darabant, Andrei Ceclan*

126 Considerations Regarding the Determination of Active and Reactive Power in Three-Phase Circuits using Hilbert Dephasing Operator
Romul Copandean, Radu Munteanu Jr., Marius Maier, Florin Dragan, Dan Iudean*

152 Propensity of Enrolling in Electrical and Power Engineering. Case study of Technical University of Cluj-Napoca
Anca Nicu, Anca Constantinescu, Andrei Cziker*

125 The History of Using Solar Energy
*Lorand Szabo**

Wednesday, 7th of June

13⁰⁰ – 14⁰⁰

POSTER SESSION 1

ROOM: MAIN HALL

Electric Machines and Drives

Session Chairs: Sorin Pavel, Marius Purcar

031 Controlling the speed of asynchronous motor with a tiny module controller

Sergiu Dan Pata, Mihaela Poienar, Mihai Cenusă, Dan Laurentiu Milici*

041 A Survey on Green Energy Harvesting Applications using Linear Electric Generators

Ioana Cornelia Gros, Dan Cristian Popa, Petre Dorel Teodosescu*

064 Design Analysis of Ferrite Magnet-Assisted Synchronous Reluctance Micro-Wind Generator

Mircea Radulescu, Hilda Fulop, Marius Dranca*

092 Performance Analysis of a Linear Heliothermic Actuator

Adrian Neculai Romanescu, Mihaela Poienar, Mihai Cenusă, Ilie Nită*

104 Considerations on Designing and Simulation of an Induction Motor Drive System for an Electric Locomotive

Ionut-Daniel Smarandescu, Radu-Florin Marinescu, Marian-Stefan Nicolae, Petre-Marian Nicolae*

Wednesday, 7th of June

13⁰⁰ – 14⁰⁰

POSTER SESSION 1

ROOM: MAIN HALL

Electricity Markets and Regulation

Session Chairs: Sorin Pavel, Marius Purcar

- 060 Determining the Amount of Electricity Generated in High Efficiency Cogeneration for the access to the Support Scheme through Green Certificates**

Pavel Atanase, Radu Pentiu, Eugen Hopulele, Vlad Martin, Adrian Tomut*

- 072 Load Forecasting using Artificial Neural Networks for Industrial Consumer**

Catalin Mihai, Elena Helerea*

- 101 Demand Response on Blocks of Buildings – Romanian Pilot Site Innovation Project**

Bogdan Bargauan, Ovidiu Fati, Andrei Ceclan, Dan Doru Micu, Denisa Stet, Levente Czumbil, Paul Muresan*

Wednesday, 7th of June

15⁰⁰ – 16³⁰

ORAL SESSION 1

ROOM: ATENA

**Analysis, Modelling, Simulation and Optimal Design in
Power Systems**

Session Chairs: Roberto Turri, Gianfranco Chicco

- 018 UPQC – the Best Solution to Improve the Power Quality in Low Voltage Weak Distribution Networks**

*Mircea Chindris**

- 040 A Parallel PSO Approach for Optimal Capacitor Placement in Electricity Distribution Networks**

Ovidiu Ivanov, Bogdan Constantin Neagu, Mihai Gavrilas*

- 042 Transformer Device for Flexible Connection of Asynchronous AC Power Systems using Semiconducting Switching with PWM**

Valeriu Bosneaga, Viktor Suslov*

- 062 Switched Networks Analysis with Inconsistent Initial Conditions**

Maria - Lavinia Iordache, Marilena Stanculescu, Mihai Iordache, Dragos Niculae, Razvan Asanache*

- 081 Harmonic Analysis of a 10.8 MW Installed Capacity Wind Farm in Cyprus**

Gom Dorji, Nicholas Christofides, Alexis Polycarpou*

- 140 Assessing The Effectiveness of Decision Making Frameworks in Local Energy Systems**

Maziar Yazdani Damavandi, Nilufar Neyestani, Miadreza Shafiekhah, Gianfranco Chicco, Joao Catalao*

Wednesday, 7th of June

15⁰⁰ – 16³⁰

ORAL SESSION 2

ROOM: VIENA

**Electromagnetic Compatibility, Power Quality and
Environmental Impacts**

Session Chairs: Alexis Polycarpou, Petre Nicolae

- 005 The Reductive Effect of Battery Charger Filters and Supercapacitors against Voltage Surges in auxiliary DC Power Systems**

Nickolay Smotrov, Alexander Kupchinov, Yuri Monakov*

- 045 Harmonic Analysis of LV Distribution Networks with High PV Penetration**

Zhida Deng, Mihai Rotaru, Jan Sykulski*

- 071 A New Concept for Providing the Electrical Control of the Automotive Suspension System**

Marian Mitroi, Camil Tudor, Anghel Chiru*

- 083 Environmental Footprint Created by Thermal Stresses of Electrical Equipment**

Alin Dragomir, Maricel Adam, Mihai Andrusca, Adrian Munteanu*

- 120 Light Flicker Detection using High-Speed Imaging**

Dragos Astanei, Florin Munteanu, Ciprian-Mircea Nemes, Alexandra Ciobanu, Mihaela Ionescu, Mihaela Adochitei*

- 148 Simple Control Strategy of the Active Filters within a Unified Power Quality Conditioner (UPQC)**

Sergiu Ivanov, Marian Ciontu, Dumitru Sacerdotianu, Alexandru Radu*

Wednesday, 7th of June

16⁴⁵ – 18¹⁵

ORAL SESSION 3

ROOM: ATENA

Distribution Systems and Dispersed Generation

Session Chairs: Ghanim Putrus, Mircea Chindriș

049 Influence of Electricity Pricing Models on the Daily Optimization of Residential End-Users integrating Storage Systems
Fabio Bignucolo, Andrea Savio, Roberto Turri, Nicola Pesavento, Massimiliano Coppo*

050 Risk of MV Distribution Systems Uncontrolled Islanding supplied by LV Embedded Generators
Andrea Savio, Roberto Turri, Massimiliano Coppo, Alberto Cerretti*

051 Influence of Load Characteristics and Main Settings of Distributed Plants Stabilizing Functions on the Undesired Islanding Detection
Andrea Savio, Roberto Turri, Massimiliano Coppo, Alberto Cerretti*

090 Photovoltaic System Modeling with Fuzzy Logic based Incremental Conductance tracking Algorithm
Vadim Cazac, Ilie Nuca*

116 Battery Storage Systems Feasibility Study for Revenue Models in Germany
Philipp Kassing, Andreas Sumper, Thaddaeus Mueller, Max Heisswolf*

151 Optimal Capacitor Placement and Sizing Considering Load Profile Variations Using Moth Flame Optimization Algorithm
Oguzhan Ceylan, Sumit Paudyal*

Wednesday, 7th of June

16⁴⁵ – 18¹⁵

ORAL SESSION 4

ROOM: VIENA

Electric Machines and Drives

Session Chairs: Alecksey Anuchin, Lorand Szabo

019 Insulation Monitoring System for Electric Drives in TN Networks

Alecksey Anuchin, George Belyakov, Dmitry Shpak, George Ilin*

025 Design and Analysis of an Axial Magnetic Flux Wind Generator

Claudiu Brad, Ioan Vadan*, Ioan Berinde*

036 Direct Monitoring of Axial Clamping Forces in Power Transformers Revisited

Andrei Marinescu, Ion Buriciu, Ionel Dumbrava, Ion Patru, Adrian Vintila*

039 Sensorless Control in Multi-Motors Electric Drives with High Dynamic and Flexible Coupling

Marcel Nicola, Dumitru Sacerdotianu, Adrian Hurezeanu*

057 Modeling of AC Voltage Source Inverter with Dead-time and Voltage Drop Compensation for DPWM with Switching Losses Minimization

Alecksey Anuchin, Maria Gulyaeva, Fernando Briz, Igor Gulyaev*

084 Improving the Operation of a Flying Dividing Shear by Using Direct Torque Control

Sorin Deleanu, Gary Ng, Jean-Paul Prevost, David Carpenter*

Thursday, 8th of June

08⁴⁵ – 10¹⁵

ORAL SESSION 5

ROOM: ATENA

Education and Informatics in Electrical and Power Engineering

Session Chairs: Oguzhan Ceylan, Simona Vlad

038 Designing, Simulation and Testing of Low Current Passive Filters used in the Didactic Activity

Dan Gabriel Stanescu, Mircea Emilian Ardeleanu, Andrei Cristian Stan*

100 Urban Energy Management – Cluj-Napoca Approach

Andrei Ceclan, Dan Doru Micu, Denisa Stet, Levente Czumbil, Paul Muresan, Bogdan Bargauan, Daniel Dranca, Horatiu Pop*

102 Illustration of Flywheel Energy Storage System Performance for Engineering Technology Students

Sorin Deleanu, Helen Thomaschewski, Travis Turnbull, Jim Sandercock, Tim Matthews, Jean-Paul Prevost*

112 Link Failure Impact on The Lifetime of WSN

Elma Zanjaj, Indrit Enesi, Blerina Zanjaj, Jetmir Lumi*

123 Educational Software Package for Electricity Market Laboratory

Virgil Dumbrava, Cristian Lazaroiu, Mihaela Teliceanu, George Glica*

131 Implementing nZEB Skills in Romanian High Education Curricula

Denisa Stet, Levente Czumbil, Andrei Ceclan, Dan Doru Micu, Laura Darabant*

Thursday, 8th of June

08⁴⁵ – 10¹⁵

ORAL SESSION 6

ROOM: VIENA

Renewable Energy

Session Chairs: Marcel Istrate, Constantin Bulac

- 021 Electricity Output Analysis of a Small Photovoltaic Power Plant**
*Roxana Oprea, Marcel Istrate, Dragos Machidon**
- 022 Assessments on the ENERED Photovoltaic Power Plant Electricity Production**
*Roxana Oprea, Marcel Istrate, Dragos Machidon**
- 032 Performance Enhanced RES Current Controller with Reduced Computational Complexity**
Zunaib Ali, Nicholas Christofides, Alexis Polycarpou*
- 037 The Effectiveness of Additional Reactive Current Injection from a Distributed Energy Resource Unit to Mitigate Short Voltage Instability during Extreme Low Voltage Ride Through**
Akbar Swandaru, Mihai Rotaru, Jan Sykulski*
- 043 Crowbar Protection Impact on Wind Farm Behavior During Grid Disturbance**
Razvan Beniuga, Marcel Istrate, Oana Beniuga*
- 109 The Management of Renewable Sources of Energy and their Connection to the Grid**
Stefan Gheorghe, Nicolae Golovanov, Dorel Stanescu*

Thursday, 8th of June

10³⁰ – 12⁰⁰

ORAL SESSION 7

ROOM: ATENA

Electromagnetics. High Voltage Equipments and Materials

Session Chair: Mihai Iordache, Dragos Niculae

020 Flux-Current Description of some Particular Iron-Core Devices

Emil Cazacu, Valentin Ionita, Lucian Petrescu*

052 Optimum Reconfiguration of Power Networks to Reduce Losses using Genetic Algorithm

Andrei Ioanes, Radu Tirnovan*

058 Application of Shielded Solid Insulation for the Complete Switchgears at High Voltage

V.N. Varivodov, Dmitry Kovalev, Alexander Timofeev, N.V. Krupenin*

059 Improved Prediction of Hysteresis Losses in Electrical Machine Cores

Valentin Ionita, Lucian Petrescu, Emil Cazacu, Eros-Alexandru Patroi, Eugen Manta*

085 Thermal Stress Analysis of Current Path from Return Circuit of Electric Traction

Adrian Munteanu, Maricel Adam, Mihai Andrusca, Alin Dragomir, Elvis Boghiu*

095 Optimization Solutions for Improving the Gain of a Pyramidal Horn Antenna through Computer-Aided Design and Simulation

Raluca-Cristina Presura, Camelia Stoica, Livia-Andreea Dina, Relu Aipu, Petre-Marian Nicolae, Marian-Stefan Nicolae*

Thursday, 8th of June

10³⁰ – 12⁰⁰

ORAL SESSION 8

ROOM: VIENA

Smart Grids. Protection and Automation

Session Chair: Renato Rizzo, Andreas Sumper

- 054 Feeder Differential Protection in Hybrid Mode - Scheme Performance with Mix of 9-2LE Sample Values and Analogue Inputs**

Joao Jesus, Abraham Varghese*

- 055 New Smart Multi-Ended Differential Solution for Power Networks**

Joao Jesus, Hengxu HA*

- 093 Multi-Agent Compromising Management of Voltage Mode of Electric Grids in The Context of Smart Grids**

Irina Klavsuts, Alexander Fishov, Dmitry Klavsuts, Marina Khayrullina*

- 117 Local performance of the Smart Rural Grid through the Local Energy Management System**

Francesc Girbau-llistuella, Andreas Sumper, Antoni Surdia-Andreu, Francisco Diaz-Gonzales, Ramon Gallart-Fernandez*

- 119 Architecture Definition and Operation Testing of Local Electricity Markets. The EMPOWER Project**

*Eduard Bullich-Massague, Monica Aragues-Penalba, Pol Olivella-Rosell, Pau Lloret-Gallego, Josep-Andreu Vidal-Clos, Andreas Sumper**

- 153 The Neutral Conductor Load in the Low Voltage Intelligent Microgrids**

Radu Porumb, Leonida Tudor, Nicolae Golovanov, Cornel Toader, Silvia Popescu*

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POSTER SESSION 2

ROOM: MAIN HALL

**Electromagnetic Compatibility, Power Quality and
Environmental Impacts**

Session Chairs: Catalin Mihai, Radu Porumb

**024 Estimating the Impact of Domestic Consumers on Power Quality
using Fuzzy Logic**

Anca Miron, Andrei Cziker, Mircea Chindris*

**114 Localization of Symmetrical Components in Fourier Discrete
Space using Hilbert Transform**

Rodica Holonec, Romul Copandean, Florin Dragan, Gheorghe
Todoran*

**124 Thermo-Mechanical Simulation of the Metal-Semiconductor
Structures of Power Integrated Circuits**

Adrian Bojita, Alex Avram, Marius Purcar, Calin Munteanu,
Vasile Topa*

129 Power Lines Magnetic Field Suppression Using Passive Loops

Emil Merdan, Calin Munteanu, Vasile Topa, Ioan T. Pop*

**130 Study of the Electromagnetic Field Distribution inside a HV/MV
Substation**

Calin Munteanu, Marius Purcar, Teofil Muresan, Alina Pop,
Renato Rizzo*

**134 The Assessment of Human Exposure to Radiated Fields from
Different Types of Lighting**

Flaviu-Ioan Pop, Calin Munteanu, Adina Racasan, Silvan-Michael
Prusu*

135 The Influence of Vibrations on Conducted Emissions

Silvan-Michael Prusu, Calin Munteanu, Adina Racasan,
Flaviu-Ioan Pop, Razvan-Marian Gliga*

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ROOM: MAIN HALL

Electromagnetics

Session Chairs: Catalin Mihai, Radu Porumb

089 A Self and Mutual Inductance Calculation Resonators with Finite Element Analysis

Georgiana Rezmerita, Maria - Lavinia Iordache, Mihai Iordache, Dragos Niculae, Marilena Stanculescu*

097 The Analysis of the Multilayer Spiral Inductors Parameters at High Frequency

Sergiu Andreica, Claudia Pacurar, Vasile Topa, Adina Racasan, Claudia Constantinescu, Razvan-Marian Gliga*

099 The Influence of Ferrite on the Spiral Inductors Inductance used for the Design of Wireless Power Systems

Razvan-Marian Gliga, Adina Racasan, Calin Munteanu, Claudia Pacurar, Claudia Constantinescu, Sergiu Andreica*

106 Influence of Operational Voltage on Switching Time of the Circuit Breakers

Elvis Boghiu, Adam Maricel, Adrian Munteanu, Alin Dragomir, Mihai Andrusca*

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POSTER SESSION 2

ROOM: MAIN HALL

HVDC and Power Electronics

Session Chairs: Catalin Mihai, Radu Porumb

007 Single Phase Inverter with Hybrid Topology and Efficient Switching Principles

Vladimir Berzan, Iurie Ermurachi*

033 The New Variant of Adaptive Interphase Power Controller with a Wide Range of Controllability

Lev P. Kalinin, D.A Zaitsev, Mihai Tirsu, Daniela N. Kaloshin,*

127 Implementation of a Modified Version of the K-means Algorithm in Power Load Curves Profiling

Ioannis Panapakidis, Georgios Christoforidis*

150 Possibilities of Connection for the Offshore Wind Power Plants

Oana Udrea, Alexandra Tolea, Gheorghe Lazaroiu, Mihai Tirsu, Victor Galbura*

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POSTER SESSION 2

ROOM: MAIN HALL

Renewable Energy and Smart Grids

Session Chairs: Catalin Mihai, Radu Porumb

128 Performance Analysis of Geographically Distributed Photovoltaic Systems

Georgios Christoforidis, Ioannis Panapakidis*

142 The Impact of Photovoltaic Power Plants Connected into 20 kV Public Grid at Electrica Romania-Mures. PV 2.8 MW Case Study

*Daniel Cornel Balan**

118 Wind Generation Forecasting of Short and Very Short Duration using Neuro-Fuzzy Networks: A Case Study

Joelson Paixao, Alzenira Abaide, Jordan Sausen, Jonas Rigodanzo, Julia Hammarstron, Luciane Neves Canha, Moises Machado dos Santos*

046 Prediction and Demand Control Methodology for a Distribution System Using Artificial Neural Networks

Tafarel Franco Milke, Alzenira R.Abaide, Daniel Bernardon, Marcelo W. Fuhrmann, Moises Machado dos Santos, Sandy T. Miranda*

066 Computation of Conductive Cylinder Image Charges using Synthesis Method

Dan Ovidiu Micu, Denisa Stet*

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POSTER SESSION 2

ROOM: MAIN HALL

Other Electrical and Power Engineering Topics

Session Chairs: Catalin Mihai, Radu Porumb

006 Application and Results of Travelling Wave Fault Locator (TWFL) Technology Applied in a 220 kV Line.

Joaquin Rodriguez, Lucas Oliveira, Pablo Jimenez, Micael Nunez, Jorge Cardenas, Almudena Munoz, Diego Arribas*

061 Analysis on the Active Control system of Vibration in the Central Heating Systems

Vasile Andrei Gorgan, Horia Balan*

098 Elements of Energy Efficiency in Water Supply Systems. A Case Study

Georgiana Moraru, Marcel Istrate*

107 About Contact Resistance of the Electrical Equipment

Costel Manuel Gheorghita, Maricel Adam, Mihai Andrusca, Adrian Munteanu, Alin Dragomir*

138 Hand Prosthesis Simulation Developed in the Virtual Instrumentation Technique

Dragos Ploscariu, Mihai Munteanu, Constantin Sorin Pica, Rozica Moga*

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ROUND TABLE 1

ROOM: ATENA

Organizers:

CNTEE Transelectrica SA

CIGRE - Romanian National Committee

Technical Risks and Solutions from Periodic, Large Surpluses or Deficits of Available Renewable Generation

WG C1.30, TB 666 CIGRE, 2016; Ciprian Diaconu, Alexandra Tolea - Transelectrica

Smart Metering in the Context of Smart Grid

Mihai Sanduleac - UPB, Dorel Stanescu - Electrica, Carmen Stanescu - Transelectrica

Energy Management System at Electrica Distributie Transilvania Nord

Lucian Ioan Calugar - EnergoBit

Internal Services Transformers TIP – HV/LV Transform Ratio

Mioara Brasoveanu, Gino Odoni - ABB

Modern FACTS Systems

Bogdan Ilias, Anders Peterson - ABB

Contributions to Systems Operation – SC C2 CIGRE

Doina Ilisiu - Transelectrica

Advantages and disadvantages of LCC and VSC Technologies for interconnection project 600MW Back to Back station in Vulcanesti-Republic of Moldova

Daniela Bolborici, Oana Zachia - Transelectrica

Thursday, 8th of June

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ROUND TABLE 2

ROOM: VIENA

**Organizer: Electrical Engineering Faculty,
University of Craiova**

*Smart solutions for the increasing of security and competitiveness
at power generation and at industrial consumers*

076 Improving the Efficiency of PQ Analysis Concerning Quasistationary Waveforms Through Special Computational Techniques

Ileana-Diana Nicolae, Petre-Marian Nicolae, Ionut-Daniel Smarandescu, Raluca-Cristina Presura*

077 Using Stationary Wavelet Transform to Evaluate the Instantaneous Components of Fundamental Frequency

Ileana-Diana Nicolae, Petre-Marian Nicolae, Diana-Cristina Maria, Marian-Stefan Nicolae, Ionut-Daniel Smarandescu*

075 Special Problems Related to Distorting Regimes Compensation at Power Transformers from Power Groups

Petre-Marian Nicolae, George-Cristian Enache, Lucian-Cristian Scarlatescu, Ion Leu, Gheorghe Amza, Catalin Stanculescu*

079 Aspects of Power Quality Improvement in a Driving System Using an Active Filter

Radu-Florin Marinescu, Petre-Marian Nicolae, Denisa-Gabriela Firiuca, Diana-Cristina Maria, Dinut-Lucian Popa, Catalin Panescu*

078 Determination of Grid Voltage Distorsions Influence Over the Reactive Power Compensation Using dSPACE

Radu-Florin Marinescu, Petre-Marian Nicolae, Dinut-Lucian Popa, Paul Popescu, Diana-Cristina Maria, Livia-Andreea Dina*

080 System for Remote Control and Monitoring using Optical Fiber and GSM Communication for Loadbreak Cutouts

Dorina-Mioara Purcaru, Anca Purcaru, Ioan Mircea Gordan, Ileana-Diana Nicolae*

- 105 Study of the Influence Exercised by the Environment Protection Equipment over the Power Quality in a Power Plant**
George-Cristian Enache, Petre-Marian Nicolae, Lucian-Cristian Scarlatescu, Ion Leu, Georghe Amza*
- 149 Controlled Switching for Fault Interruption in Transport and Distribution Lines**
Virginia Ivanov, Maria Brojboiu, Sergiu Ivanov*

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ROUND TABLE 3

ROOM: FOYER

Organizer: Technical University of Cluj-Napoca

**Centre of Competence for Wireless Intra-SATellite Technologies
IntraSAT-Tech**

Current Status and Future Trends in Satellite Communications

Satellite Communications Platform at the Technical University of Cluj-Napoca

Tudor Palade, Centre of competence for wireless Intra-SATellite Technologies (IntraSAT-Tech), Romania

Wireless Intra-Satellite Communication Technologies

Emanuel Puşchiţă, Centre of competence for wireless Intra-SATellite Technologies (IntraSAT-Tech), Romania

UWB Transmissions for Intra-Satellite Communications

Ovidiu Raţiu, CEO Control Data Systems (CDS Wireless), Romania

High Throughput Satellite Systems and Traffic Management in Smart Gateway Networks

Andra Păstrăv, Centre of competence for wireless Intra-SATellite Technologies (IntraSAT-Tech), Romania

Novel Approaches in Radiation Shielding of Electronic Circuits in Satellites

Cătălin Popa, Centre of competence for wireless Intra-SATellite Technologies (IntraSAT-Tech), Romania

Ionospheric Propagation Monitoring using Global Navigation Satellite Systems (GNSS)

Andra Păstrăv, Centre of competence for wireless Intra-SATellite Technologies (IntraSAT-Tech), Romania

EMI / EMC Test Requirements for Space Applications

Silvan Prusu, Razvan Gliga, Calin Munteanu, NUMELEC Research Laboratory, TU Cluj-Napoca, Romania