COPYRIGHT INFORMATION

Proceedings of the 2\textsuperscript{nd} International Conference on Modern Power Systems

No part of this publication may be reproduced, stored or transmitted in any form or by any means without prior written permission from the editors.

Additional copies of the Conference Proceedings are available from:

**MPS 2008 CONFERENCE SECRETARIAT**
Technical University of Cluj-Napoca
Faculty of Electrical Engineering
Str. G. Baritiu 26-28, 400027 Cluj-Napoca, ROMANIA
Phone: + 40.264.401.451
Fax: + 40.264.592.903
Email: mps2008@et.utcluj.ro

All rights reserved

The responsibility for the content and the English language of each paper in the Proceedings rests solely with their authors. As some of the delivered paper did not meet the issued guidelines, the editors performed their necessary formatting in order to get the uniformity of the Proceedings.

*Printed by*  
S.C. MEDIAMIRA S.A. Cluj-Napoca  
Cp 117, op 1, Cluj-Napoca  
Str. Iuliu Maniu 26  
400095 Cluj-Napoca, Romania

*Edited by*  
Prof. dr. eng. Calin MUNTEANU, Technical University of Cluj-Napoca  
Prof. dr. eng. Mircea CHINDRIS, Technical University of Cluj-Napoca  
Assoc. Prof. dr. eng. Andrei CZIKER, Technical University of Cluj-Napoca  
Assoc. Prof. dr. eng. Laura GRINDEI, Technical University of Cluj-Napoca

*Copyright*  
Technical University of Cluj-Napoca  
Faculty of Electrical Engineering  
Str. G. Baritiu 26-28, 400027 Cluj-Napoca, ROMANIA
The 2nd edition of the International Conference on Modern Power Systems, MPS 2008, will take place at the “Belvedere” Hotel from Cluj-Napoca, Romania. The main purpose of the Conference is to throw a bridge between recent advances of research on modern power systems. Therefore, beside the traditional sessions focusing on the progress of the theoretical research, an important stress will be paid on the advanced industrial applications and solutions.

Following the first edition of the Conference in 2006 where 64 papers were presented in 8 oral sessions, this year the Scientific Advisory Committee selected 110 papers grouped on 7 main topics. All the accepted papers will be published on a special issue of Acta Electrotechnica Journal edited by Faculty of Electrical Engineering under the patronage of the Romanian Academy of Technical Sciences.

On behalf of the Local Organizing Committee we would like to express our gratitude to the Scientific Advisory Committee, to the reviewers who have ensured the high quality of the papers selected, as well as to the chairpersons of the sessions and the organizers of the technical exhibition. We would like to thank also to our partners F.D.E.E. ELECTRICA TRANSILVANIA NORD S.A. and C.N.T.E.E. TRANSELECTRICA S.A., Cluj-Napoca Branch, to our sponsor Companies and to all those who in one way or another have made MPS 2008 possible.

We truly trust that MPS 2008 will be a fruitful professional experience for everyone, and take this opportunity to welcome you in Cluj-Napoca, a beautiful city called “The Heart of Transylvania”.

Prof. dr. eng. Calin MUNTEANU  Prof. dr. eng. Mircea CHINDRIS
Honorary Committee

Corneliu STAN  General Manager S.C. ELECTRICA S.A., Romania
Stelian GAL  General Manager, C.N. TRANSELECTRICA S.A., Romania
Radu MUNTEANU  Rector, Technical University Cluj-Napoca, Romania

Scientific Advisory Committee

Hermina ALBERT  ISPE SA, Romania
Gianfranco CHICCO  Politecnico di Torino, Italy
Mircea CHINDRIS  Technical University of Cluj-Napoca, Romania
Silviu DARIE  Technical University of Cluj-Napoca, Romania
Johan DECONINCK  VUB University of Brussels, Belgium
Gilbert DE MEY  University of Gent, Belgium
Bernard DEMOULIN  Science and Technology University of Lille, France
Mircea EREMIA  “Politehnica” University of Bucharest, Romania
Eugenio GARCIA MORENO  University of Balearic Islands, Spain
Nicolae GOLOVANOV  “Politehnica” University of Bucharest, Romania
Vassilis HATZIATHANASSIOU  “Aristotle” University of Salonic, Greece
Mihai IORDACHE  “Politehnica” University of Bucharest, Romania
Marcel ISTRATE  “Gh. Asachi” technical University of Iasi, Romania
Virgil MAIER  Technical University of Cluj-Napoca, Romania
Andrei MARINESCU  ICMET Craiova, Romania
Petre NICOLAE  University of Craiova, Romania
Calin MUNTEANU  Technical University of Cluj-Napoca, Romania
Sorin PAVEL  Technical University of Cluj-Napoca, Romania
Ioan T. POP  CNTEE Transelectrica SA, Romania
Anca POPESCU  ISPE SA, Romania
Petru POSTOLACHE  “Politehnica” University of Bucharest, Romania
Renato RIZZO  “Federico II” University of Naples, Italy
Antoni SUDRIA I ANDREU  “Politecnica” University of Catalunya, Spain
Emil SIMION  Technical University of Cluj-Napoca, Romania
Andreas SUMPER  “Politecnica” University of Catalunya, Spain
Dumitru TOADER  “Politehnica” University of Timisoara, Romania
Vasile TOPA  Technical University of Cluj-Napoca, Romania
Viorel VARVARA  “Gh. Asachi” technical University of Iasi, Romania
Ioan VIZITEU  University of Bacau, Romania
Contents

Topic 1. Transport and Distribution Systems

FLORIN CIAUŞIU, MIRCEA EREMIA
Probability of a Blackout in Romanian Power System ................................................................. 1

CRISTINA DANIELA DEAC, I. BIRIS, GH. ZIRBO
The Need for Increasing Eco-Energy Efficiency in Romanian Metallurgy Industry .................. 7

IOAN DIACONU, IOAN DORIN HAŢEGAN, TRAIAN FAGARASAN, MARIUS OLTÉAN
Recent Maintenance Experience on Hv Bushings ....................................................................... 10

STELIAN ALEXANDRU GAL, IOAN DIACONU, MARIUS NICOLAE OLTÉAN, MIRCEA OPINCARU, LUCIAN BRABETE
On-line monitoring of OHL Conductor Temperature; Live-Line Installation of the RITHERM System .......... 13

STELIAN ALEXANDRU GAL, DORU MIRCEA PAUNESCU, FELICIA MIHAELA LAZAR, Rodica Balaurescu
Automatic System to Avoid Major Frequency Disturbances – A Part of the Defence Plan against Major Disturbances of the Romanian EPS ...................................................... 19

CARLOS GÓNZALES, ROBERTO VILLAFÁFILA, ANDREAS SUMPER, EDOUARD VALSERA, MIRCEA CHINDRIS
Isolation of Faults and Restoration of Power Systems ................................................................... 24

GHEORGHE MAZILU, MIHAELA CONU, ADRIAN MAZILU
Asset Condition Assessment for Transmission and Distribution HV Equipment ................................. 30

DORU PAUNESCU, MIRCEA NEMEŞ, GHEORGHE VUC
Probability of Congestions because of Contingencies in Power Systems ........................................... 35

NICOLAE FLOREAN PINTE, COSTICA NITU, CALIN MUNTEANU,
IOAN DIACONU, EMIL MERDAN, MARIUS NICOLAE OLTÉAN
TIS Cultural Filtration, Implemented within the Directional Relay Structure ...................................... 39

NICOLAE FLOREAN PINTE, MIRCEA EREMIA, CALIN MUNTEANU, EMIL MERDAN, MARIUS NICOLAE OLTÉAN
It’s Time for the Linear Code ............................................................................................................. 46

DANA MIHAELA POP, ILIE ARDELEAN, NICOLAE CHIOSA,
ŞTEFAN KILYENI, GHEORGHE VUC, CONSTANTIN BARBULESCU
Congestion Risk Management by Using the Probable Value of Congestion.
Case Study for Western Part of Romanian Power System .................................................................... 50

OANA POP, MIRCEA NEMEŞ
Reactive Power Allocation in Electrical Systems .............................................................................. 58

SIMONA-LILIANA SOARE
Risk Management Integrated System - a Powerful Condition for a (Power) Energy Market ................. 62

BOGDAN TOMOIAGA, MIRCEA CHINDRIS
Approach for Optimal Reconfiguration of a Distribution System ...................................................... 65
Topic 2. Exploitation, Command, Control and Protection Systems

DAN APETREI, VIOREL PINTEA
Quality of Measurement Data Support for Power Quality ................................................................. 69

ILIE ARDELEAN, NICOLAE CHIOSA, VASILE DUSA, BUCUR LUSTREA, IOAN BORLEA, DAN JIGORIA OPREA
Feeding Self Services from a Substation Belonging to the National Power Grid using Fuel Cells Source as Normal and Backup Source ................................................................. 73

M.E. ARДЕLEANУ, A. MARINESCU, GH. OPRAN, AL. MANТА, D. POPА
On Damped A.C. Voltage Use for On-Site Measurement of Partial Discharges in HV Equipment Insulation ................................................................. 79

ANDREI CECLAN, DAN D. MICU, EMIL SIMION, LEVENTE CZUMBIL, ANCA MUTU, CLAUDIU BOCA
On an Energy Efficiency Strategy for Romanian Water Companies ............................................. 83

CIPRIAN DIAConU, IOAN T. POP, MIHAELA NITU, CALIN MUNTEANU
Remote Control of the Power Substations Belonging to the Romanian Tso Company ................. 87

IOAN DIAConU, IOAN DORIN HАȚEGAN, NICOLAE FLOREAN PINTE, DUMITRU TOADER
The Protective Block for Medium Voltage Networks ................................................................. 91

VASILE METIU, AURORA MORARU, VALENTIN ZAHARESCU, DANIEL MORAR, GHEORGHE MORARU
Monitoring of Transformer Units of ST Sibiu – Achievements and Anticipation ......................... 94

H. NAФISI, A.H. AGHAХANI, M. ABЕDI, G.B. GHAREHPETIAN, A.H. HESSAMINIA
Detection of Partial Discharge Location in Power Transformers Using Fuzzy ATRmap Neural Network ................................................................. 97

ILEANA DIA На NICOLAE, PETRE-MARIAN NICOLAE, LUCIAN MANDACHE
Some Aspects Concerning Energy Consumption in an Urban Substation ...................................... 101

GABRIELА RAȚĂ, MIHAI RAȚĂ, CRENGUȚА ЕLENA BOBRIC, RADU PENTIUС
Bay Control Solution with PLC ........................................................................................................... 105

CARMEN STANESCU, STELIAN GAL, SORIN PISPIRIS, PETRU POSTOLACHE
Power Quality Permanent Monitoring Systems in Romania .......................................................... 109

IOAN P. VIZITEU, ION NEDELCU, MARIA VIZITEU
Telecommunications used for Protection Systems in Romania: Gutinas and Adjacent Substations .... 113

Topic 3. Power System Analysis and Simulation

A.H. AGHAХANI, H. NAФISI, M. ABЕDI, H. HOSSENINIA, A.H. HESSAMINIA
Using Bayesian Network for Fault Diagnosis on High Voltage Power Transmission Lines ............. 117

GH. CARTINA, GH. GRIGORAS, Е.С. BOBRIC
Robust Load Models for Customers’ Consumption .............................................................................. 121

V. CHATZIAТHANASIOU, G. T. ANDREOU, D.P. LABRДIS
A Finite Element Approach for the Thermal Analysis of Parallel Routed LV Power Distribution Cables .............................................................................................................................. 125

ANDREI CZIKER, МIRCEA CHINDRIS, ANCA MIRON
Distributed Generators for Voltage Unbalance Mitigation .................................................................. 129
ANDREI CZIKER, MIRCEA CHINDRIS, ANCA MIRON, STEFAN UNGUREANU
Implementation of Fuzzy Logic in Power Engineering using Virtual Instrumentation ........................................ 133

GILBERT DE MEY, VASILIS CHATZIATHANASIOU
Effective Thermal Conductivity of Multicore Power Cables ................................................................. 137

ANDREA DEMEAN, ADRIAN TĂMAȘ
Power System Optimization Using PSO Program from EDSA – PALADIN DESIGNBASE .................. 140

MARIAN GAICEANU, GIAMMICHELE ORSELLO
Load-Following Model of the Solid Oxide Fuel Cell Power Conditioning System .......................... 146

A.H. HESAMINIA, S.H. HOSSEINIAN, B. VAHIDI, H. NAFISI, A.H. AGHAHANI
A Novel Approach for Optimal Power Flow in Power Networks
Including FACTS Devices Using PSO ........................................................................................................ 152

IRINEL-SORIN ILIE, GIANFRANCO CHICCO
Exploiting Support Vector Clustering Techniques for Electrical Load Profiling .................................. 156

MARCEL ISTRATE, MIRCEA GUȘĂ
Analysis of Lightning’s Strokes on HV Lines in an ATP Approach .................................................. 162

VIRGIL MAIER, SORIN GH. PAVEL, IULIAN BIROU
Connecting the Maximum Power Receiver in the Equivalent Receivers Network ........................ 166

ANCA MIRON, MIRCEA CHINDRIS, ANDREI CZIKER
Virtual Electrical Signals Generator ........................................................................................................... 170

H. NAFISI, M. DAVARI, B. VAHIDI
Corona and Electromagnetic Transient Study in Overhead Transmission Lines .......................... 174

PETRE-MARIAN NICOLAE, ION PURCARU, ILEANA-DIANA NICOLAE
The Designing and Manufacturing of a Monitoring System for an
Asymmetrical Three-Phase Consumer .................................................................................................. 179

B. VAHIDI, A. H. RANJBAR, H. OMRAPOUR, M. AKBARI
Application of Artificial Neural Network in Cable Life Time Estimation
and its Failure rate per 100 km .................................................................................................................. 183

B. VAHIDI, M. SHAIFEI, M. MAHMOODAN
Differential Evolution Algorithm Approach to Design of an
Optimal Active Power Controller for AC-DC Transmission Systems .................................................. 187

GHEORGHE VUC, CONSTANTIN BĂRBULESCU, ȘTEFAN KILYENI,
DAN JIGORIA-OPREA, ANDREI CECLAN, DAN D. MICU
New Software Tool Designed for Stochastic Power System Analysis .................................................. 191

Topic 4. Renewable Resources Development and their Impact on Distribution Systems

HERMINA ALBERT, CRISTINA ANDREEA ȘERBAN
Grid Requirements for the Integration of Wind Power Plants into the Electric Network .................... 195

MONICA ALONSO, H. AMARÍS
Wind Farm Optimal Placement for Voltage Stability Enhancement .................................................. 200

SIMONA ARDELEAN, ANCA MUTU, SILVIU DARIE, IOAN VADAN, ANDREI CECLAN
On the Implementation of a Micro Hydropower Plant at a Sand Processing Company .................... 204
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Pilot Station for Studying the Hybrid Wind-Hydro Power Plants</td>
<td>208</td>
</tr>
<tr>
<td>Wind Farm Simulation with Doubly-Fed Induction Generator (WFS-DFIG)</td>
<td>212</td>
</tr>
<tr>
<td>Overview on the Grid Code Requirements Related to the Connection of Wind Power Plants</td>
<td>216</td>
</tr>
<tr>
<td>Software Development for Analysis of Solar-Wind Hybrid Systems</td>
<td>220</td>
</tr>
<tr>
<td>Power Quality Analysis of a System Based on Renewable Energy</td>
<td>224</td>
</tr>
<tr>
<td>Integration of Photovoltaic Generation on Low-Voltage Networks through Software Analysis Tool</td>
<td>227</td>
</tr>
<tr>
<td>A Challenge for Romanian Power System – the Wind Farms Integration</td>
<td>232</td>
</tr>
<tr>
<td>Study of the Energetic Regime for a Fuel Cell Discharge</td>
<td>236</td>
</tr>
<tr>
<td>Sizing Guidelines for Stand-Alone Systems Supplied by Photovoltaic Arrays</td>
<td>241</td>
</tr>
<tr>
<td>Reliability in NPS Operation in Presence of Wind Power Plants</td>
<td>247</td>
</tr>
<tr>
<td>The Influence of Wind Generation Power on Electrica Transilvania Nord 110kV Electrical Distribution Network</td>
<td>252</td>
</tr>
<tr>
<td>Energetic Balance of a Proton Exchange Membrane Fuel Cell (PEMFC) Generator</td>
<td>256</td>
</tr>
<tr>
<td>Optimum Design of Wind/PV/Diesel/Batteries Hybrid Systems</td>
<td>261</td>
</tr>
<tr>
<td>The Developing of a Scientific Renewable Energies Park</td>
<td>265</td>
</tr>
<tr>
<td>Mitigation of Buried Metallic Pipelines due to 50 Hz AC Influence of the High Voltage Overhead Lines</td>
<td>269</td>
</tr>
<tr>
<td>Numerical Monte Carlo Formulation of an Electromagnetic Interference Problem</td>
<td>273</td>
</tr>
<tr>
<td>Numerical Analysis of Conducted Electromagnetic Interferences</td>
<td>277</td>
</tr>
</tbody>
</table>
ELEONORA DARIE, COSTIN CEPIȘCĂ, EMANUEL DARIE
Modeling EMI Problems Associated with DC-DC Converters ............................................................... 281

M. DAVARI, B. VAHIDI
A New Analysis of VFTO on Transformers Based on DM: Considering Frequency Variable Losses ................................................................................................................. 285

VALERIU DAVID, IONUT NICA, ALEXANDRU SALCEANU
On the Estimation of SAR in Human Head from Electromagnetic Field Measurements ........................................... 290

DANIELE DESIDERI, ALVISE MASCHIO, MONICA SPOLAORE
Design and Realization of a Magnetron Sputtering Device for Deposition of Electromagnetic Shields ................................................................................................. 294

DANIELE DESIDERI, ALVISE MASCHIO
Preliminary Tests on a Low Cost Two-Port TEM Cell ......................................................................................... 298

ANDREAS EBERHARD, ALEX MCEACHERN
A New, Ultra-Low-Cost Power Quality and Energy Measurement Technology ................................................. 302

UWE FLOR, FRANK NIECHCIAL
Update on EFT/Burst Testing - The revision of IEC 61000-4-4 ........................................................................... 305

BOGDAN MANEA, DAN D. MICU, RADU MUNTEANU JR., DIANA POPOVICI, OVIDIU POPOVICI
Overview of Methods and Models Regarding the Electromagnetic Fields Exposure near HV Lines .................. 309

MIODRAG MILUTINOV, ANAMARIJA JUHAS, MIROSLAV PRŠA
Electric and Magnetic Fields in Vicinity of Overhead Multi-Line Power System .................................................. 313

ANCA MIRON, ANDREI CZIKER, MIRCEA CHINDRIS
Detection and Analysis of Interharmonics .............................................................................................................. 317

CALIN MUNTEANU, EMIL MERDAN, ANDREI Marinescu, TEOPHIL MURESAN
ADINA RACASAN, CLAUDIA PACurar, VIRGIL POP, MIHAI GEORGE, NICOLEANU PAUL
Compliance with EU Directives Regarding the Human Exposure to Electromagnetic Fields. Experimental Study in Cluj-Napoca City ................................................................. 321

VASILE MUREŞAN
The Estimation of the Harmonic Parameters using the Kalman Filtration .............................................................. 325

IOAN POCAN, ROMAN MORAR, CLAUDIA RĂCĂȘAN, OVIDIU MUNTEAN, ILIE SUĂRĂȘAN, IOAN SFÂRLEA
Conducted Emissions Measurement of the Assembly “High Voltage Source – Corona Electrostatic Separator” in the Main System .............................................................................. 329

DENISA STET, DAN D. MICU, A. CECLAN, LAURA DARABANT, MIHAELA PLESA
The study of the Electromagnetic Interferences between HV Lines and Metallic Pipelines using a Professional Analysis Software ............................................................................. 333

Topic 6. General Electrotechnics

M. S. D. ACAMPA, R. RIZZO
A Lumped Parameter Model of Permanent Magnet Brushless Machine ............................................................. 337

CARMEN CIURTIN, DAN ILEA, FRÉDÉRIC GILLON, PASCAL BROCHET, MIRCEA M. RADULESCU
Comparative Design of Radial-Flux and Axial-Flux Switched Reluctance Motors ................................................ 348

LUCIA DUMITRIU, MIHAI IORDACHE
Increasing Analysis Efficiency of Analogue Circuits by Order Reduction ........................................................... 352
A.S. Gavris, R. Munteanu Jr.; B. Zagar; M. D. Iudean; M. Munteanu, Diana Popovici  
Controlling a DC Motor with a PI Regulator using a DSP .......................................................... 357

Mihai Iordache, Lucia Dumitriu, Elena Rotar, Gabriela Nicolescu  
Changing the Thermal Class of the Electrical Machines by Using a New Electro Insulating Varnish ................. 361

Theodoros I. Kosmanis, Ioannis T. Rekanos  
Optimal Design of Permanent Magnets by the Differential Evolution Algorithm and a Hybrid Time Domain Technique .......................................................... 366

Dorin Lucache, Adrian Aparaschivei, Gabriel Chiriac  
Short Overview on the Uninterruptible Power Systems ........................................................................... 370

Dan Micu, Dan Doru Micu, Lazar Chira  
The Design Optimization for an Electrical Circuit using the Geometrical Inversion with Parametrical Elements .............................................................................. 374

Dan D. Micu, Dan Micu, Andrei Ceclan, Emil Simion  
Interaction between an Overhead Single Conductor and a Two-Layer Earth. Analytical and Numerical Development .............................................................................. 378

Catalin Moldovan  
The Neutral Movement Voltage of the Medium Voltage Electrical Networks Working in Unbalanced Regime .................................................................................. 383

Stefan Nagy, Claudiu Mich-Vancea  
Computing Eddy Currents in Induction Melting Processes ............................................................................. 388

M. Pantea, A. Grava, M. Silaghi, D. Soproni, F. I. Hathazi  
The Local Interpretation of the Gradient and the Direct Decoupling of the Adapted Residue .............................. 394

Florin Pop, Horia F. Pop  
Residential Energy Efficient Lighting ........................................................................................................... 397

Miroslav Prșa, Karolina Kasaș-Lațetić  
Frequency Dependent Current Distribution and Impedance in a “U” Shaped Busbars ........................................... 404

Vasile Darie Șoproni, Francisc Ioan Hathazi, Carmen Otilia Molnar, Mircea Arion, Livia Bandici  
Analysis Regarding the Technical Aspects that Appear during Drying, Disinfection and Decontamination in High Frequency Field for Agricultural Seeds ...................................... 408

M. Tîrșu, V. Berzan  
Composition of HV Cable Mathematical Model Step-by-Step ........................................................................ 413

Topic 7. Additional Papers

C. Barbulescu  
Plasma Techniques in Airflow Control. Part I: Theoretical Background of Surface Dielectric Barrier Discharge .......................................................................................... 417

C. Barbulescu, J. P. Cambronne, S. Kilyeni, D. Vatau  
Plasma Techniques in Airflow Control. Part II: Experimental Results of Surface Dielectric Barrier Discharge .......................................................................................... 421

Iulian Bîrou, Calin Rusu  
Robust Sensorless Control: From MRAS Algorithms to H∞ Theory ................................................................ 427
I. FELEA, N. COROIU, I. BOJA, I. MANEA, D. ALBUT-DANA, E. BARLA
Electric Switchers Parametrical Reliability Evaluate of an Electric Energy Distribution Zone.................. 432

ILEA VALENTIN, ALBERTO BERIZZI, MARCO MERLO, CRISTIOAN BOVO, MIRCEA EREMIA
Implementation of Various Objective Functions for Reactive Optimal Power Flow in the Presence of the Hierarchical Voltage Control System.......................................................... 438

MIHAI IORDACHE, LUCIA DUMITRIU, DRAGOS NICULAE
A New Reduced-Order Technique Based on State Equation State.............................................................. 444

A. NOTHOLT, D. COLL-MAYOR, A. ENGLER, E. GARCÍA-MORENO
Development of a Test Stand for Minigrids .................................................................................................. 450

PETRE MARIAN NICOLAE, ILEANA DIANA NICOLAE
Recordings and Numerical Processing of Distorting and Unbalanced Regimes from a Large Energetic Group ........................................................................................................... 455

IRINA RACOVITAN, I. IONESCU
Improvement of the Medium and High Voltage Circuit Breaker Maintenance Process by Means of the Off-Line Diagnosis Techniques................................................................. 459

EMIL E. SIMION
Exploring Computation Hierarchy and Distribution in Sensor Networks.................................................. 463

SIMONA-LILIANA SOARE
Risk Modeling for Energy - One Step for Energy Management tend to Energy ......................................... 467

D. TOADER, ST. HARAGUS, I. DIACONU, D. HATEGAN, P. RUSET, N. Pinte
Digital Protective Blocks for Medium-Voltage Networks with Isolated Neutral-Point .................................. 470

MARILENA UNGUREANU, RALUCA ROSCA, ADRIAN C-TIN RUSU
Electromagnetic Disturbances Injected in High Voltage Networks by the Large Electrical Installations ....... 475

VIOREL VARVARA
The Coefficients of Non-symmetry and Power Factor Computation in Star Connected Networks that Operate in Non-symmetrical Steady States ................................................. 479

CONSTANTIN POSOIU, MIRELA DUTOIU
General Guidelines for Distribution and Transmission Tariffs Calculation within the Romanian Liberalized Electricity Market................................................................. 483

GEORGE VISAN, VALENTIN COMANESCU
Transmission Substations Control & Protection Systems Retrofitting.................................................... 487

SPONSOR'S PAGE