

# **2008 Proceedings of the 43rd International Universities Power Engineering Conference**

**Padova, Italy  
1-4 September 2008**

**Pages 1-430**

**IEEE Catalog Number:  
ISBN 13:**

**CFP08569-PRT  
978-1-4244-3294-3**

# Table of Contents

<b>Simultaneous Optimization of Power System Stabilizer Parameters, Number and Location via Genetic Algorithms</b> .....	1
<i>H. Alkhatib, J. Dubeau, A. Choucha, A. Hellal, S. Arif, A. Choucha</i>	
<b>Surge Propagation Characteristics on Nonuniform Lines</b> .....	6
<i>Shozo Sekioka</i>	
<b>Available Transfer Capability Enhancement Using Series FACTS Devices in a Designed Multi- Machine Power System</b> .....	11
<i>Ali Arzani, Mostafa Jazaeri, Y. Alinejad-Beromi</i>	
<b>Optimal Sliding Mode Controller for Power System's Load-Frequency Control</b> .....	17
<i>Tamara Radosevic, Kresimir Vrdoljak, Nedjeljko Peri</i>	
<b>Mitigation of Power System Blackout by Blocking Zone3 of Minimum Distance Relays</b> .....	22
<i>M. Zare, M. Aghamohammadi, M. Saeedi</i>	
<b>Measurement placement algorithms for state estimation when the number of phasor measurements by each PMU is limited</b> .....	27
<i>Michael Hurtgen, Pavel Praks, Jean-Claude Maun, Petr Zajac</i>	
<b>Integrated Protection of Distribution Lines Using Transient Comparison Technique</b> .....	32
<i>Z Q Bo, A Klimek, R D Xu, X Z Dong</i>	
<b>Adaptive Control for Power Oscillation Damping by Means of a Thyristor Controlled Series Capacitor (TCSC)</b> .....	37
<i>Mauro Monge, Nicklas Johansson, Lennart Ängquist, Hans-Peter Nee</i>	
<b>A Genetic Continuation Power Flow Approach to Assess Power System Vulnerability</b> .....	42
<i>C. Genesi, G. Granelli, P. Marannino, M. Montagna, I. Siviero</i>	
<b>Research on Losses of Power Systems Affected By HVDC Control Strategy</b> .....	47
<i>Chongru Liu, Z Q Bo, A Klimek</i>	
<b>A New Genetic Algorithm Method for Optimal Coordination of Overcurrent Relays in a Mixed Protection Scheme with Distance Relays</b> .....	51
<i>Hossein Askarian Abyaneha, Somayeh Sadat Hashemi Kamangar, Farzad Razavib, Reza Mohammadi Chabanlooa</i>	
<b>Optimal Power Flow Solution by a Modified Particle Swarm Optimization Algorithm</b> .....	56
<i>Hamzeh Hajian-Hoseinabadi, Seyed Hamid Hosseini, Mehdi Hajian</i>	
<b>Current Differential Protection based on Non- Conventional Instrument Transformer and IEC61850</b> .....	60
<i>Kun Liu, Xinzhou Dong, Zhiqian Bo</i>	
<b>The Simplifying Partition Algorithm of Reliability Evaluation to Complicated Medium Voltage Power Distribution Grid</b> .....	65
<i>Zhou Ling, Ding Xiaoqun, Yan Huimin, Liu Hongliang</i>	
<b>AVC System Based on On-line Voltage Stability Monitoring System</b> .....	70
<i>Ding Xiaoqun, Zhou Ling, Liu Hongliang</i>	
<b>Flexible Voltage Control to Support Distributed Generation in Distribution Networks</b> .....	75
<i>Maciej Fila, Gareth A. Taylor, Jonathan Hiscock, Malcolm R. Irving, Peter Lang</i>	
<b>Environmentally Significant Operational Loss Reduction on the Full GB Transmission Network</b> .....	80
<i>Peter Macfie, Haibin Wan, Rachel Morfill, Martin Bradley, Gary Taylor, Malcolm Irving</i>	
<b>Damping Improvement by SSSC and STATCOM in a Part of Iran Electrical Network</b> .....	86
<i>M. Sedighzadeh, M. S. Toulabi, A. Rezazadeh, M. Khatibi, B. Allahverdi-Charandabi</i>	
<b>Optimized POD in Coordination With UPFC For Damping of Power System Oscillations</b> .....	91
<i>S. N. Dhurvey, V. K. Chandrakar</i>	

# Table of Contents

<b>A Novel Detection Criterion for Transformer Inrush Based on Short-Window Filter Algorithm.....</b>	<b>96</b>
<i>Zhengqing Han, Shuping Liu, Shibin Gao, Zhiqian Bo</i>	
<b>A Mixed Strategy Nash Equilibrium of Multi-Player Games with a Transmission Congestion Considering PTDF.....</b>	<b>101</b>
<i>Jae-Hong Shin, Kwang-Ho Lee, Sang-Hoon Kim</i>	
<b>Analysis of Power Transaction by Solving Nash Equilibrium in Electricity Markets with Financial Transmission Rights.....</b>	<b>106</b>
<i>Jae-Hong Shin, Sang-Hoon Kim, Kwang-Ho Lee</i>	
<b>A Study on Outage Planning for Electric Power Facilities by Using GAs.....</b>	<b>111</b>
<i>Koji Kawahara, Shinya Yoshimoto</i>	
<b>A MADM-based Support System for DR Programs .....</b>	<b>116</b>
<i>H. Aalami, G. R. Yousefi, M. Parsa Moghadam</i>	
<b>System Operator Interfaces to Active Network Management Schemes in Future Distribution.....</b>	<b>123</b>
<i>S. L. Hay, G. W. Ault, K. R. W. Bell, J. R. McDonald</i>	
<b>Selecting of SSSC Control Mode to Improve Transient and Small Signal Stability in Iran National Grid .....</b>	<b>127</b>
<i>M. Sedighzadeh , S. A. Fatemi, A. Rezazadeh and M. Khatibi</i>	
<b>Model of Interruptible Load Contract for Minimum Compensation Cost.....</b>	<b>132</b>
<i>Youbing Zhang, Wei Chen, Qiang Gao, Zhijian Liu and Yijia Cao</i>	
<b>Study on Model of Power Grid Operation Security Cost in Market Environment .....</b>	<b>136</b>
<i>Youbing Zhang, Wei Chen, Xiao Zheng, Weng Guoqing and Yijia Cao</i>	
<b>An Architecture of Spatial Three Dimension Visualization Information Platform for Urban Power Grid.....</b>	<b>140</b>
<i>San Yecai, Zhu Chuanbai, Cao Yijia and Guo Chuangxin</i>	
<b>Impacts of Small Synchronous Generators at Medium Voltage on Transient Stability of Bulk Power System .....</b>	<b>145</b>
<i>M. R. Aghamohammadi, M. Saeedi and M. Zare</i>	
<b>Adaptive distance protection of double-circuit lines based on differential equation fault loop model .....</b>	<b>150</b>
<i>Marcin Bozek and Jan Lzykowski</i>	
<b>Power Generation Redispatching to Improve Transient Stability in Power Systems Using Controllability and Observability Gramians.....</b>	<b>155</b>
<i>Nguyen Dang Toan, Didier Georges and Tran Quoc Tuan</i>	
<b>Risk Based Spinning Reserve Allocation Considering Emergency Demand Response Program.....</b>	<b>160</b>
<i>Ashkan Yousefi, Ebrahim Shayesteh, Kazem Zare, S. Jalal Kazempour, Mohsen Parsa Moghaddam and M. R. Haghifam</i>	
<b>A Study on AGC Scheme Based on Real Time Frequency Characteristics.....</b>	<b>165</b>
<i>Hyun-Shin Park and Kern-Joong Kim</i>	
<b>A MIP-Based Optimal Operation Scheduling of Pumped-Storage Plant in the Energy and Regulation Markets.....</b>	<b>170</b>
<i>S. Jalal Kazempour, Ashkan Yousefi, Kazem Zare, Mohsen Parsa Moghaddam, M.R. Haghifam and G.R. Yousefi</i>	
<b>Optimizing the Re-closing Time to Improve the Transmission Capacity of Power System.....</b>	<b>175</b>
<i>P. Li, B. H. Zhang, Z. G. Hao, Y. F. Rao, Y. T. Wang, Z.Q. Bo and A. Klimek</i>	
<b>Wavelet Transform Approach for Differential Protection of Three-Phase Transformers .....</b>	<b>180</b>
<i>Mario Orlando Oliveira, Rodrigo Harstein Salim and Arturo Suman Bretas</i>	
<b>Frequency Analysis for Planned Islanding Operation in the Danish Distribution System - Bornholm.....</b>	<b>185</b>
<i>Yu Chen, Zhao Xu and Jacob Østergaard</i>	

# Table of Contents

<b>Removal of Decaying DC Offset in Current Signals for Power System Phasor Estimation .....</b>	<b>190</b>
<i>Amir A. A. Eisa and K. Ramar</i>	
<b>Analysis of the National 8th November 2003 Libyan Blackout .....</b>	<b>194</b>
<i>M. El-werfelli, R.Dunn, M. Redfern and James Brooks</i>	
<b>An Optimized Defence Plan for a Power System .....</b>	<b>199</b>
<i>M. El-werfelli, James Brooks and R. Dunn</i>	
<b>Controlled Islanding Scheme for Power Systems .....</b>	<b>205</b>
<i>M. El-werfelli, James Brooks and R.Dunn</i>	
<b>Power System Islanding Based on Multilevel Reduced Graph Partitioning Algorithm.....</b>	<b>211</b>
<i>WANG Cheng-gen, ZHANG Bao-hui, LI Peng, SHU Jin, CHENG Lin-yan, HAO Zhi-guo, BO Zhi-qian and Andrew Klimek</i>	
<b>Simulated Power System Restoration .....</b>	<b>217</b>
<i>Olof Samuelsson, Lars Lindgren and Bo Eliasson</i>	
<b>Coal Management Module (CMM) For Power Plant.....</b>	<b>222</b>
<i>Arup Sinha, R.N.Lahiri, Somenath Byabortta, S.Chowdhury, S.P.Chowdhury and Peter Crussley</i>	
<b>A New Approach for Profit-Based Unit Commitment Using Lagrangian Relaxation Combined with Ant Colony Search Algorithm.....</b>	<b>229</b>
<i>Bavafa, M., Navidi, N. and Monsef, H.</i>	
<b>A Fuzzy-Based Approach for Transformer Dynamic Loading Capability Assessment.....</b>	<b>235</b>
<i>M. Savaghebi, A. Gholami, A. Vahedi and H. Hooshyar</i>	
<b>Application of Artificial Neural Network for Short Term Load Forecasting .....</b>	<b>240</b>
<i>N. Amral, D. King and C.S. Ozveren</i>	
<b>Reliability Study of A Micro-Grid Power System.....</b>	<b>245</b>
<i>A.K.BASU, S.P.Chowdhury, S.Chowdhury, D.Ray and P.A.Crossley</i>	
<b>The Effect Research on Transformers and Protections under HVDC Monopole Ground Operation Mode .....</b>	<b>249</b>
<i>YU Yang, HAO Zhi-guo, ZHANG Bao-hui and Bo Zhi-qian</i>	
<b>Future Trends of Substation Automation System by Applying IEC 61850.....</b>	<b>257</b>
<i>M.Vadiati, M. Abbas Ghorbani, A. R. Ebrahimi and M. Arshia</i>	
<b>Design and Study of a Switch Reactor for Central Queensland SWER system.....</b>	<b>261</b>
<i>M. R. Hesamzadeh, N. Hosseinzadeh and P. J. Wolfs</i>	
<b>Improvement of Load Bus Voltages Considering the Optimal Dispatch of Active and Reactive Powers .....</b>	<b>266</b>
<i>M. Tarafdar Hagh, A. Sadigh Manesh, Tabriz University and M. R. Hesamzadeh</i>	
<b>Load Profiling for the Electricity Market.....</b>	<b>274</b>
<i>Virgil Dumbrava, Gabriel Bazacliu, Bogdan Nicoara, Cristian Lazaroiu and Dario Zaninelli</i>	
<b>Performance and Control of Photovoltaic Systems Supplying both Primary and Ancillary Services.....</b>	<b>277</b>
<i>Federico Delfino, Gio Battista Denegri, Marco Invernizzi and Renato Procopio</i>	
<b>A Wavelet based Pilot Protection Scheme for Series Compensated Line in Parallel with Another Line .....</b>	<b>282</b>
<i>Sadegh Shahamati Beris and Seyed Mohammad Shahrtash</i>	
<b>The Protection Principle and Engineering Application of Double-Circuit Transmission Lines in China.....</b>	<b>287</b>
<i>Yongjun Xia, Gang Hu, Xianggen Yin, Zhe Zhang and Wei Chen</i>	
<b>Second Order Sensitivities for Constrained Reactive Optimal Power Flow.....</b>	<b>292</b>
<i>Alberto Berizzi, Cristian Bovo, Marco Merlo, Gabriele Callegari, Marco Porcellini and Massimo Pozzi</i>	
<b>Generator End Winding Vibration Monitoring.....</b>	<b>299</b>
<i>David Shally, Michael Farrell and Kevin Sullivan</i>	

# Table of Contents

<b>Impact of Distributed Generation on Network Security: Effects on Loss-of-Main Protection Reliability .....</b>	<b>304</b>
<i>F. Bignucolo, R. Caldon, M. Frigo, A. Morini, A. Pitto and F. Silvestro</i>	
<b>Optimal Location of Biogas and Biomass Generation Plants .....</b>	<b>309</b>
<i>Gianni Celli, Emilio Ghiani, Massimo Loddo, Fabrizio Pilo and Simone Pani</i>	
<b>Enhancing Transient and Small Signal Stability in Power Systems Using a Posicast Excitation Controller .....</b>	<b>315</b>
<i>M. R. Aghamohammadi, A. Ghorbani and S. Pourmohammad</i>	
<b>Voltage Inversion due to Presence of TCSC on Adjacent Lines in Inter Phase Faults and Distance Relay Mal-Operation.....</b>	<b>320</b>
<i>S. Jamali, A. Kazemi and H. Shateri</i>	
<b>Measured Impedance at Relaying Point Considering Transmission Line Capacitance.....</b>	<b>325</b>
<i>H. Shateri and S. Jamali</i>	
<b>A Dynamic Modelling Environment for the Evaluation of Wide Area Protection Systems .....</b>	<b>331</b>
<i>I. F. Abdulhadi, R. M. Tumilty, G. M. Burt and J. R. McDonald</i>	
<b>An Analytical Approach to the Indication of Small Disturbance Angle Stability in Future Power Systems .....</b>	<b>336</b>
<i>Nima Farkhondeh Jahromi, George Papefthymiou and Lou van der Sluis</i>	
<b>Multi-Objective Vector Evaluated PSO with Time Variant Coefficients for Outlier Identification in Power Systems .....</b>	<b>341</b>
<i>Li Feng, Ziyang Liu, Chao Ma, Lin Huang, Li Zhao and Tao Chen</i>	
<b>The Fast Estimation Method of Contingency Voltage Stability with Sensitivity Compensation .....</b>	<b>347</b>
<i>Su Su and Kazuyuki Tanaka</i>	
<b>Distribution Load Flow Considering Committed Loads and their Growth in Electric Design Process .....</b>	<b>351</b>
<i>H. Shateri, A. A. Amjadi, M. Ghorbani and A. H. Mohammad-Khani</i>	
<b>Bifurcation Analysis and Chaos Detection in Power Systems.....</b>	<b>356</b>
<i>S. Grillo, S. Massucco, A. Morini, A. Pitto and F. Silvestro</i>	
<b>A Study of the Energy Function Method for the Park Generator Model.....</b>	<b>362</b>
<i>Yuhki Abe and Kazuyuki Tanaka</i>	
<b>A Multilateral Market Coupling Approach for the Allocation of Cross Border Transmission Capacity .....</b>	<b>366</b>
<i>C. Genesi, P. Marannino, M. Montagna, I. Siviero and F. Zanellini</i>	
<b>Comparison of Steady-State SVC Models in Load Flow Calculations.....</b>	<b>371</b>
<i>Peiyuan Chen, Zhe Chen and Birgitte Bak-Jensen</i>	
<b>A Combinatorial Approach Based on Wavelet Transform and Hidden Markov Models in Differential Relaying of Power Transformers .....</b>	<b>376</b>
<i>S. Jazebi, B. Vahidi, S. H. Hosseinian and R. A. Naghizadeh</i>	
<b>Analysis and Prediction of Power and Energy Losses in Distribution Networks.....</b>	<b>383</b>
<i>Holger Schau and Alexander Novitskiy</i>	
<b>New Irish Single Electricity Market and its Initial Analysis.....</b>	<b>388</b>
<i>A P Birch and C S Özveren</i>	
<b>A Fuzzy-logic Based Bidding Strategy for Participants in the UK Electricity Market .....</b>	<b>394</b>
<i>Linlin Hu, Gareth Taylor and Malcolm Irving</i>	
<b>Modeling Study for High Impedance Fault Detection in MV Distribution System .....</b>	<b>399</b>
<i>Tao Cui, Xinzhou Dong, Zhiqian Bo, Andrew Klimek and Armien Edwards</i>	
<b>Measured Impedance at Relaying Point for Inter Phase Faults on Next Line .....</b>	<b>404</b>
<i>H. Shateri and S. Jamali</i>	
<b>Overvoltage Protection on a DC Marine Electrical System .....</b>	<b>411</b>
<i>S.D.A. Fletcher, P.J. Norman, S.J. Galloway and G.M. Burt</i>	

# Table of Contents

<b>A Novel Three Phase Load Flow Algorithm Based on Symmetrical Components for Distribution Systems</b> .....	416
<i>Kang Xiaoning, Suonan Jiale, Song Guobing, Fu Wei and Zhiqian Bo</i>	
<b>Establishment and Characterization of a Traceable AC Voltage Source at NIS, Egypt</b> .....	420
<i>H. A. Mageed, M. Halawa, A. F. Zobaa and M. M. Abdel Aziz</i>	
<b>A Novel Dynamic Frequency Estimation Algorithm In Power System</b> .....	425
<i>Mai R, He Z Y and Kirby B</i>	
<b>Investigation of Damping Effect of Power System Stabilizer in the Presence of Communication Delays</b> .....	431
<i>Saffet Ayasun and Ayetül Gelen</i>	
<b>The Study of Ground Distance Protection of 500kv Quadruple-Circuit Transmission Lines on the Same Tower</b> .....	436
<i>Shujie Sun, Nengling Tai and Zhiqian Bo</i>	
<b>A Conjectural Supply Function Model for the Italian Electricity Market</b> .....	442
<i>A.M.A.K. Abeygunawardana, A. Berizzi, C. Bovo and M. Innorta</i>	
<b>European Energy Policy Goals: Rivals or Friends in Transmission?</b> .....	447
<i>David Bekaert, Patrik Buijs, Leonardo Meeus, Erik Delarue and Ronnie Belmans</i>	
<b>A Derivative Based Instantaneous Frequency Tracking Algorithm</b> .....	452
<i>Chao Zhang, Jianchen Tan, Brian Kirby and Zhiqian Bo</i>	
<b>Maximum Loss Reduction Applying Combination of Optimal Conductor Selection and Capacitor Placement in Distribution Systems with Nonlinear Loads</b> .....	455
<i>Marvasti Vahid, Askarian Abyaneh Hossein and Mazlumi Kazem</i>	
<b>Comparison of Modified K-Means and Hierarchical Algorithms in Customers Load Curves Clustering for Designing Suitable Tariffs in Electricity Market</b> .....	460
<i>Nadali Mahmoudi Kohan, Mohsen Parsa Moghaddam and G.R. Yousefi</i>	
<b>Distributed Optimal Reactive Power Dispatch based on Parallel Particle Swarm Optimisation Algorithm</b> .....	465
<i>Y. Li, L. Jiang, Q.H. Wu, Q.Y. Jiang and Y.J. Cao</i>	
<b>The Use of Mixture of Generalized Gaussian for Trend Analysis of the Load Duration Curve: Summer and Winter Load Variability in Tunisia</b> .....	470
<i>M.Ould Mohamed Mahmoud, M.Ja`idane-Sa`idane and N.Hizaoui</i>	
<b>Dynamic Voltage Stability Assessment of an Electric Power Network using Composite Load Models</b> .....	475
<i>R. M. Monteiro Pereira, Adelino J. C. Pereira, C. M. Machado Ferreira and F. P. Maciel Barbosa</i>	
<b>A Matlab-Based Tool for Power System Dynamics Analysis: A Comparison with PSS/E</b> .....	480
<i>R. Vargas, F. S. Sellschopp, M. A. Arjona and D. Díaz</i>	
<b>Simulation Study of the Secondary Arc Extinction due to Single Line to Ground Fault on the Thailand 500 kV Line from Mae Moh to Tha Ta Ko</b> .....	485
<i>K. Ngamsanroj, S. Premrudeepreechacharn and S. Chimklai</i>	
<b>Daily Load Response Model to Electricity Price for Customers</b> .....	490
<i>Liang Cai, Zhe Chen and Birgitte Bak-Jensen</i>	
<b>A Novel Algorithm for Power Fault Diagnosis Based on Wavelet Entropy and D-S Evidence Theory</b> .....	495
<i>Fu Ling, He Zhengyou and Bo Zhiqian</i>	
<b>Electricity Load Profile Classification Using Fuzzy C-Means Method</b> .....	499
<i>Iswan Prahastono, David J King, C.S. Ozveren and D. Bradley</i>	
<b>Application of Energy Management Systems in JCC</b> .....	504
<i>Dhany Barus and Sahala Turnip</i>	
<b>Comparison of Loss Allocation Methods in a Regulated System (A case Study at Java-Bali 500KV Grid System in Indonesia)</b> .....	509
<i>F. Ansyari, C. S. Özveren and D. King</i>	

# Table of Contents

<b>A Review of the Use of Genetic Algorithms in Economic Load Dispatch</b> .....	<b>514</b>
<i>W. Warsono, C.S. Ozveren, David J King and D. Bradley</i>	
<b>Economic Assessment of Transmission Expansion Projects in Competitive Electricity Markets - An Analytical Review</b> .....	<b>519</b>
<i>M. R. Hesamzadeh and P. J. Wolfs</i>	
<b>Derivation of a New Mathematical Framework for Transmission System Augmentation using von Stackelberg Game</b> .....	<b>529</b>
<i>M. R. Hesamzadeh, N. Hosseinzadeh and P. J. Wolfs</i>	
<b>Developments in Digital Simulation of Traction Transformer</b> .....	<b>535</b>
<i>Moxue Li, Jinghan He, Le Yu, Z Q Bo and A Klimek</i>	
<b>Development of Simulation Program for Transient Stability Analysis in Korean Nuclear Power System</b> .....	<b>539</b>
<i>Oon-pyo ZHU, Sung-kyun Oh and Kern-joong Kim</i>	
<b>Effects of Electrical Parameters of Induction Generator on the Transient Voltage Stability of a Fixed Speed Wind Turbine</b> .....	<b>544</b>
<i>L. Dusonchet, F. Massaro and E. Telaretti</i>	
<b>Wind Turbine Mechanical Characteristics and Grid Parameters Influence on the Transient Voltage Stability of a Fixed Speed Wind Turbine</b> .....	<b>549</b>
<i>L. Dusonchet, F. Massaro and E. Telaretti</i>	
<b>Application of Monte Carlo Technique to Evaluate the Power Injectable on Electrical Grid by Wind Farms</b> .....	<b>554</b>
<i>M. G. Ippolito, F. Massaro and M. Mustacciolo</i>	
<b>Long-term Load Forecasting of Iranian Power Grid Using Fuzzy and Artificial Neural Networks</b> .....	<b>559</b>
<i>Mohammad Moradi Dalvand, Seyed Bahram Zahir Azami and Hadi Tarimoradi</i>	
<b>Analysis of Interconnected Earthing Systems of MV/LV Substations in Urban Areas</b> .....	<b>563</b>
<i>Angelo Campoccia, Eleonora Riva Sanseverino and Gaetano Zizzo</i>	
<b>On the Economic Regulation of Voltage Quality</b> .....	<b>568</b>
<i>G. Carpinelli, P. Caramia, P. Varilone and P. Verde</i>	
<b>Robust Distribution State Estimation for Active Networks</b> .....	<b>573</b>
<i>Fabrizio Pilo, Giuditta Pisano and Gian Giuseppe Soma</i>	
<b>Automated Recognition of Irregularities in Substation Load Profiles Due to Abnormal Feeding Arrangements</b> .....	<b>579</b>
<i>A J. Leaman, H. Nouri, A. Polycarpou, F. V. der Linde and R.M. Ciric</i>	
<b>An architecture Wi-Fi and GPRS for Efficient Management of Distribution Electrical Networks</b> .....	<b>584</b>
<i>Fabio Campoccia, Iolanda Incontrera, Eleonora Riva Sanseverino and Ilenia Tinnirello</i>	
<b>A Particle Swarm Optimization for Siting and Sizing of Distributed Generation in Distribution Network to Improve Voltage Profile and Reduce THD and Losses</b> .....	<b>589</b>
<i>Y. Alinejad-Beromi, M. Sedighzadeh and M. Sadighi</i>	
<b>Reconfiguration of Deregulated Distribution Network for Minimizing Energy Supply Cost by Using BGA</b> .....	<b>594</b>
<i>H. Kazemi Kargar, S. Jalilzadeh, A. Rezazadeh, V. Nabi and G. Zaree Govar</i>	
<b>Analysis of Island-Operated Distribution Networks with Distributed Induction Generation under Fault Conditions</b> .....	<b>599</b>
<i>Francesco Sulla and Olof Samuelsson</i>	
<b>Protection, Transient Stability and Fault Ride- Through Issues in Distribution Networks with Dispersed Generation</b> .....	<b>604</b>
<i>Ioanna Xyngi, Anton Ishchenko, Marjan Popov and Lou van der Sluis</i>	

# Table of Contents

<b>Optimal Distributed Generation Allocation in Distribution Systems Employing Ant Colony to Reduce Losses</b> .....	609
<i>Farnaz Sheidaei, Majid Shadkam and Mahdi Zarei</i>	
<b>Effects of Line Parameters on Performance of Voltage Source Converters in Distributed Generation Systems</b> .....	614
<i>Zhe Chen, Y. HU and H. McKenzie</i>	
<b>Investigation into the Implementation of Auto Reclosing Scheme in Distribution Networks with High Penetration of DGs</b> .....	619
<i>S.F. Tan and S.K.Salman</i>	
<b>The Role of Micro Wind Generation in Ireland's Energy Future</b> .....	624
<i>Keith Sunderland and Michael F. Conlon</i>	
<b>Power Factor Control for Inverter-Interfaced Microgeneration</b> .....	629
<i>Adel H. Rafa, Olimpo Anaya-Lara and James R. McDonald</i>	
<b>Overview of Short-Circuit Contribution of Various Distributed Generators on the Distribution Network</b> .....	634
<i>Panagiotis Karaliolios, Anton Ishchenko, Edward Coster, Johanna Myrzik and Wil Kling</i>	
<b>The Contribution to Distribution Network Short- Circuit Current Level from the Connection of Distributed Generation</b> .....	640
<i>Sreto Boljevic and Michael F. Conlon</i>	
<b>Distributed Generation in the Dutch LV Network - Self-supporting Residential Area -</b> .....	646
<i>M. Mes, G.M.A. Vanalme, M. Bongaerts, G.J.P Verbong and W.L. Kling</i>	
<b>Islanding Operation of Distributed Generators in Active Distribution Networks</b> .....	651
<i>S.P.Chowdhury, S.Chowdhury, C.F.Ten and P.A.Crossley</i>	
<b>Study of Microturbine Models in Islanded and Grid- Connected Mode</b> .....	656
<i>A.K.Saha, S.P.Chowdhury, S.Chowdhury and P.A.Crossley</i>	
<b>Transient Stability Evaluation of Wind Farms Implemented with Induction Generators</b> .....	661
<i>H.R. Najafi, F. Robinson, F. Dastyar and A.A. Samadi</i>	
<b>Investigation into the Use of Hydrogen Technology with a Wind Farm Constrained by the Grid</b> .....	666
<i>Simon Blake and Philip Taylor</i>	
<b>A Self-tuning PID Control for a Wind Energy Conversion System Based on the Lyapunov Approach</b> .....	671
<i>M. Sedighzadeh, A. Rezazadeh and M. Khatibi</i>	
<b>Micro, Midi or Macro? Onshore Wind Turbine Economics for Scotland</b> .....	675
<i>A Makkawi, N Gupta and T Muneer</i>	
<b>A Neural Network Model for Ni-Cd Batteries</b> .....	682
<i>Mohammad Sarvi and Mohammad A.S. Masoum</i>	
<b>Voltage and Current Based MPPT of Solar Arrays under Variable Insolation and Temperature Conditions</b> .....	687
<i>Mohammad A.S. Masoum and Mohammad Sarvi</i>	
<b>Wind Generator with Double Stator Induction Machine. Control Strategy for a Water Pumping Application</b> .....	692
<i>Pablo Camocardi, Pedro Battaiotto and Ricardo Mantz</i>	
<b>Tidal Power in the United Kingdom</b> .....	697
<i>T. J. Hammons</i>	
<b>Overview of Biomass Conversion and Generation Technologies</b> .....	705
<i>Mathias Loeser and Miles Alexander Redfern</i>	
<b>CFD Analysis of the Thermal State of an Overhead line Conductor</b> .....	709
<i>I. Makhkamova, P.C. Taylor, J.R. Bumby and K. Makhkamov</i>	



# Table of Contents

<b>Optimization of Energy Parks With Biomass Plants and Water Desalination .....</b>	<b>713</b>
<i>Daniel Buschert and Berthold Bitzer</i>	
<b>Geothermal Sustainability in Europe and Worldwide .....</b>	<b>717</b>
<i>Thomas J. Hammons and Arni Gunnarsson</i>	
<b>Fault Detection on Wind Generators .....</b>	<b>727</b>
<i>R. Mesquita Brandão, J. Bezeza Carvalho and F. Maciel Barbosa</i>	
<b>Managing Variability of Wind Energy with Heating Load Control .....</b>	<b>732</b>
<i>H. Savage, J. Kennedy, B. Fox and D. Flynn</i>	
<b>Voltage Stabilization in Connection of Wind Farms to Transmission Network Using VSC-HVDC.....</b>	<b>737</b>
<i>Hanif Livani, Javad Rouhi and Hossein Karimi-Davijani</i>	
<b>Techno-Economic Analysis of Thermal Power Generation in a System with High Levels of Non-dispatchable Renewable Energy .....</b>	<b>742</b>
<i>Patrick Keatley and Neil Hewitt</i>	
<b>Doubly-Fed Induction Generator Models for Optimization Algorithm of Wind Farms.....</b>	<b>747</b>
<i>Milton Kumar Das, S.Chowdhury, S.P.Chowdhury and P.A. Crossley</i>	
<b>New Grounding System of Wind Turbines.....</b>	<b>752</b>
<i>H. Kazemi Kargar, M. Sedighzadeh and A. Mosavi</i>	
<b>Economical Balances within a Delegate Dispatch of Renewable Generations .....</b>	<b>757</b>
<i>Edgardo D. Castronuovo and Julio Usaola</i>	
<b>Photovoltaic Laboratory for Study of Renewable Solar Energy .....</b>	<b>762</b>
<i>Dorin Bica and Dumitru Cristian</i>	
<b>Fault Ride-Through Capability Improvement of Wind Farms Using Double Fed Induction Generator.....</b>	<b>767</b>
<i>H. Karimi-Davijani, A. Sheikholeslami, H. Livani and N. Norouzi</i>	
<b>Active and Reactive Power Control of DFIG Using SVPWM Converter.....</b>	<b>772</b>
<i>H. Karimi-Davijani, A. Sheikholeslami, R. Ahmadi and H. Livani</i>	
<b>Modeling and Control of Fuel Cell-Battery Hybrid Power Systems for Portable Electronics .....</b>	<b>777</b>
<i>Piergiorgio Alotto, Massimo Guarnieri and Federico Moro</i>	
<b>Equipment and Methodology for Linking Overhead Line Circuit Ratings to the Output of Nearby Windfarms.....</b>	<b>782</b>
<i>Lisa McClean, Leslie Bryans and Jeremy Colandairaj</i>	
<b>Fault Analysis in Integrated Wind Generation Networks.....</b>	<b>787</b>
<i>Morris Brenna, Giuseppe Esposito, Federica Foidelli and Mariacristina Roscia</i>	
<b>Custom Power Systems and Software Platforms for Wind Farms under Voltage Dips Situations.....</b>	<b>791</b>
<i>C. Álvarez, H. Amaris, O. Samuelsson, D. Flórez and L. González</i>	
<b>Wind Generation System - A Comprehensive Survey Report.....</b>	<b>795</b>
<i>K. Kaur, S. P. Chowdhury and S. Chowdhury</i>	
<b>Identification of Wind Turbine Model for Individual Pitch Controller Design.....</b>	<b>800</b>
<i>Vlaho Petrovic, Mate Jelavic and Nedjeljko Peric</i>	
<b>Analysis of the Power Output of a Portuguese Wind Farm .....</b>	<b>805</b>
<i>Joana Almeida and F.P. Maciel Barbosa</i>	
<b>The Impact Of Generation Mix on the Scheduling of Power Systems with High Wind Penetration.....</b>	<b>810</b>
<i>Mounes Alhajali, Michael Cregan, Damian Flynn and D. J. Morrow</i>	
<b>Energy Supplying of High Altitude Isolated Users .....</b>	<b>815</b>
<i>Luigi Alberti</i>	

# Table of Contents

<b>Modeling of Doubly Fed Induction Generator (DFIG) Equipped Wind Turbine for Dynamic Studies</b> .....	820
<i>Mattia Marinelli, Andrea Morini, Andrea Pitto and Federico Silvestro</i>	
<b>On the Relevance of Reliability Assessment for Wind Farm Performance Evaluation</b> .....	826
<i>Anna Rita Di Fazio and Mario Russo</i>	
<b>Integration of Tidal Power Based-Electrical Plant into a Grid</b> .....	832
<i>S.K. Salman, J Gibb and I Macdonald</i>	
<b>Case Study: Malaysian Student Experience in Conducting Electrical Power Project</b> .....	836
<i>Shamsul Aizam Zulkifli, Md. Zараfi Ahmad, Rohaiza Hamdan and Nor Anija Jalaludin</i>	
<b>Distributed Multi-Generation and Application of the Energy Hub Concept in Future Networks</b> .....	840
<i>L. Carradore and F. Bignucolo</i>	
<b>The Importance of IEC 61850 Interoperability Testing</b> .....	845
<i>J.C TAN, C Zhang and Z. Q. Bo</i>	
<b>Fundamental Research Challenges for the Simulation and Modelling of Active Networks</b> .....	850
<i>Iain D. BROADFOOT, Robert A.F. CURRIE, Graham W. AULT and James R. McDONALD</i>	
<b>Optimal Allocation of APLCs Using Genetic Algorithm</b> .....	855
<i>Nematollah Dehghani and Iman Ziari</i>	
<b>Voltage Stability Analysis and Improvement for the South-West Libya Electrical Power System Part 1: Problem Identification</b> .....	859
<i>M.R.Wadi, M. F. Bara, Ola Carlson and Faraj Ali Elammari</i>	
<b>Transient Stability Analysis of a Power System with High Wind Penetration</b> .....	864
<i>Lasantha Meegahapola, Damian Flynn and Tim Littler</i>	
<b>The Structural Stability Analysis of Active Power Filter and Its Capability of Suppressing EMI</b> .....	869
<i>Zhang Lin, Luo Xibin, Liu Xianshan and Ding Kai</i>	
<b>Wind Power Fluctuations Mitigation by DC-Link Voltage Control of Variable Speed Wind Turbines</b> .....	874
<i>Weihao Hu, Zhe Chen, Yue Wang and Zhaoan Wang</i>	
<b>Online Power Quality Measurements and Voltage Sags Analysis</b> .....	879
<i>Srete Nikolovski, Zvonimir Klaić, Zorislav Kraus and Goran Slipac</i>	
<b>A Novel Method Based on Wavelet Threshold De-Noising Technology and Prony Analysis for Flicker Measurement</b> .....	884
<i>Youbing Zhang, Quan Chen, Jianxiong Liu, Yi Hu and Yijia Cao</i>	
<b>Algorithm Research and Application for Locating Power-Quality Event Source</b> .....	888
<i>Guoqing Weng, Youbing Zhang, Jing Wang and Yi Hu</i>	
<b>Impact of High Penetration of CHP Generation on Urban Distribution Networks</b> .....	892
<i>Srete Boljevic, Michael F. Conlon and Noel Barry</i>	
<b>Flicker Measurements in Transmission Network</b> .....	897
<i>Miloš Maksić, Boštjan Blažič and Igor Papič</i>	
<b>Optimal Harmonic Power Flow Using An Ant Colony System-Based Algorithm</b> .....	902
<i>Iman Ziari and Alireza Jalilian</i>	
<b>Experimental Verification of Harmonic Load Models</b> .....	906
<i>M. E. Balci, D. Ozturk, O. Karacasu and M. H. Hocaoglu</i>	
<b>A Study of Tower Shadow Effect on Fixed-Speed Wind Turbines</b> .....	910
<i>D. McSwiggan, T. Littler, D. J. Morrow and J. Kennedy</i>	
<b>RSFCL Optimum Shunt Resistance Determination to Enhance Power System Transient Stability</b> .....	915
<i>H. Hooshyar and M. Savaghebi</i>	

# Table of Contents

<b>Improved Algorithm for On-line Harmonic Identification in HVDC Application</b> .....	920
<i>H.R. Najafi, F. Robinson and A. Shoulaei</i>	
<b>Quasi-Resonant DC-Link Control of Three-Level Active Power Filter</b> .....	925
<i>Io-Keong Lok and Man-Chung Wong</i>	
<b>Transformer Dynamic Loading Capability Assessment under Nonlinear Load Currents</b> .....	930
<i>M. Savaghebi, A. Gholami and A. Jalilian</i>	
<b>Dispersed Generators Providing Ancillary Services Through Power Electronic Interfaces: A Hybrid System</b> .....	935
<i>A. Bracale, C. Di Perna, M. Mangoni and D. Proto</i>	
<b>Analysis of black-startup and islanding capabilities of a combined cycle power plant</b> .....	940
<i>A. Borghetti, M. Bosetti, C.A. Nucci, M. Paolone, G. Ciappi and A. Solari</i>	
<b>Some Considerations on Interharmonic Voltage Limits and their Assessment</b> .....	946
<i>Roberto Langella and Alfredo Testa</i>	
<b>Effects of Frequency Deviation on the Accuracy of Harmonic Analysis and Mitigation</b> .....	952
<i>E C Bentley, G A Putrus, P Minns and S McDonald</i>	
<b>Investigation of Comparison on Porcelain and Epoxy Resin Insulator Conditions from a Coastal Area due to Various Parameters</b> .....	956
<i>Waluyo, Parouli M. Pakpahan, Suwarno and Maman A. Djauhari</i>	
<b>Effective Protection Distance from Cascade Coordinated Surge Protective Devices to Equipment in Low-Voltage AC Power Circuits</b> .....	961
<i>Sreten Škuletić and Vladan Radulović</i>	
<b>Online Condition Monitoring of Partial Discharge in HV Underground Cables</b> .....	966
<i>A. S. Ayub, W. H. Siew and J. J. Soraghan</i>	
<b>Using Artificial Neural Network to Estimate Maximum Overvoltage on Cables with Considering Forward and Backward Waves</b> .....	970
<i>M.Shafiee, B.Vahidi, S.H.Hosseinian and S.Jazebi</i>	
<b>Risk Evaluation and Creep in Conventional Conductors Caused by High Temperature Operation</b> .....	978
<i>F. Mas and L. Dusonchet</i>	
<b>Lightning Performance of 275 kV Transmission Lines</b> .....	983
<i>R. Bhattarai, R. Rashedin, S. Venkatesan, A. Haddad, H. Griffiths and N. Harid</i>	
<b>Impulse Breakdown of Short Rod-plane Air Gaps with a Dielectric Covered Rod</b> .....	988
<i>P. N. Mavroidis, P. N. Mikropoulos, C. A. Stassinopoulos, P. Rafailidis and G. Smaragdakis</i>	
<b>Insulator and Clearance Requirements in Overhead Line Transmission Systems without Shield Wires</b> .....	993
<i>Thomas K. Soerensen and Joachim Holboell</i>	
<b>Comparing Denoising Performance of DWT,WPT, SWT and DT-CWT for Partial Discharge Signals</b> .....	998
<i>S. H. Mortazavi and S. M. Shahrtash</i>	
<b>Air Insulated Compact Substations</b> .....	1004
<i>M. Albano, A. Haddad, H. Griffiths and P. Coventry</i>	
<b>Very Fast Transient Overvoltages Generated by Gas Insulated Substations</b> .....	1008
<i>D.S. Pinches and M. A. Al-Tai</i>	
<b>Analysis and Discussion on Lightning Disturbance on 110kV Transmission Line in Mountainous Area</b> .....	1013
<i>Jing Liangbing, Li Jinglu, Xu Genyang and Yan Xiping</i>	
<b>Research on Ground Potential Interference of Substation</b> .....	1017
<i>Na He, Guoxi Zhao and Jinglu Li</i>	

# Table of Contents

<b>Calculation and Measuring of Low-frequency Electric Field Distribution of 10(20)/0.4 kV, 630 kVA Transformer Station .....</b>	<b>1021</b>
<i>Hidajet Salkić, Vlado Madžarević and Eldar Hukić</i>	
<b>Magnetic Shielding of MV/LV Substations: Numerical Modeling and Experimental Validation.....</b>	<b>1026</b>
<i>D. Desideri, M. Guarnieri, A. Maschio and F. Moro</i>	
<b>Computation of Magnetic Field from Quadruple Tower Transmission Lines in Malaysia .....</b>	<b>1031</b>
<i>I.Said and H.B.Hussain</i>	
<b>Multi-Agent Based Voltage Control of STATCOMs to Enhance Elimination of Voltage Disturbances in Power System Contingencies .....</b>	<b>1036</b>
<i>M. R. Tousi, S. H. Hosseinian, A.H. Jadidinejad and M. B. Menhaj</i>	
<b>Electric Field Radiation from an Overhead Transmission Line Located Above a Lossy Ground .....</b>	<b>1041</b>
<i>Pooya Taheri, Behzad Kordi and Ani M. Gole</i>	
<b>Human Exposure to Electric Fields Under an Overhead MV Power Line.....</b>	<b>1046</b>
<i>D. Desideri, A. Maschio and E. Poli</i>	
<b>Inductive and conductive interference problems for practical cases solved with special interpolation algorithms.....</b>	<b>1051</b>
<i>Dan Doru Micu, Andrei Ceclan, Laura Darabant and Denisa Stet</i>	
<b>Internal Overvoltages in Cast Resin Transformer Windings in Presence of Resonance Effects.....</b>	<b>1055</b>
<i>C. Ceretta, R. Gobbo and G. Pesavento</i>	
<b>Electromagnetic Forces on Contacts.....</b>	<b>1060</b>
<i>S.J Kulas, L. Kolimas and M. Piskala</i>	
<b>Experimental Validation of Coupled Electromagnetic Thermal FEM Model of Transverse Flux Heaters .....</b>	<b>1064</b>
<i>Marco Bullo, Fabrizio Dughiero, Michele Forzan, Sergio Lupi and Aristide Spagnolo</i>	
<b>Effects of PWM Chopper Drive on the Torque- Speed Characteristic of DC Motor .....</b>	<b>1068</b>
<i>Ayetül Gelen and Saffet Ayasun</i>	
<b>Control of Double Fed Induction Generator Wind Turbine During Network Voltage Unbalance Conditions.....</b>	<b>1072</b>
<i>Joseph Kearney and Michael F Conlon</i>	
<b>FEM Coupling for Transient Performance Analysis of a Salient Poles Synchronous Generator .....</b>	<b>1077</b>
<i>Lidija Petkovska, Zlatko Kolondzovski and Goga Cvetkovski</i>	
<b>Closed Loop Bandwidth Impact on Doubly Fed Induction Machine Asymmetries Detection Based on Rotor Voltage Signature Analysis .....</b>	<b>1082</b>
<i>Domenico Casadei, Fiorenzo Filippetti, Claudio Rossi and Andrea Stefani</i>	
<b>Rotor Angle Estimation of Synchronous Generator from Online Measurement.....</b>	<b>1087</b>
<i>E. Ghahremani, M. Karrari, M. B. Menhaj and O. P. Malik</i>	
<b>Controlled Switching of Transformers - Effects of Closing Time Scatter and Residual Flux Uncertainty .....</b>	<b>1092</b>
<i>Andreas Ebner, Michael Bösch and Renato Cortesi</i>	
<b>Vector Control of Permanent Magnet Synchronous Motor with Surface Magnet Using Artificial Neural Networks.....</b>	<b>1097</b>
<i>Jafar Zare</i>	
<b>Identification of Generator Parameters From SSFR Test For Montazer-QAEM Powerplant .....</b>	<b>1101</b>
<i>Gholamhasan Zafarabadi and Elham Amini Boroujeni</i>	
<b>Investigation of Effect of Stator Resistance on Accuracy of Generator Parameters Identification with SSFR Method .....</b>	<b>1107</b>
<i>Gholamhasan Zafarabadi and Elham Amini Boroujeni</i>	

# Table of Contents

<b>Sensorless Indirect Field-Oriented Control of Induction Motor using Intelligent PI Controller</b> .....	1111
<i>N. Noroozi-Varcheshme, A. Ranjbar-Noiey and H. Karimi-Davijani</i>	
<b>Torque Evaluation of Permanent Magnet DC Commutator Motor Using FEM Data</b> .....	1116
<i>Goga Cvetkovski and Lidija Petkovska</i>	
<b>A Novel Method for Real-time Generating Synchronous Machine <math>\tilde{E}_q</math> Waveforms and Its Application System</b> .....	1121
<i>Wenhui Yu, Shaorong Wang, Shijie Cheng and Jia Ma</i>	
<b>Recreating the Mechanical Response of a Diesel Generator Set using a Variable Speed DC Drive</b> .....	1125
<i>Cooper, A.R., Morrow, D.J. and McGowan, D.J.</i>	
<b>Generator Excitation Control using a Parameter Space Design Method</b> .....	1130
<i>Shuta Yoshimura, Hiroyuki Iki, Yoshihisa Uriu, Hirokazu Anai and Noriko Hyodo</i>	
<b>Power Demand and Energy Usage of Container Crane - Comparison between AC and DC Drives</b> .....	1134
<i>Thanh Tran, Saeid Nahavandi and Robert Reid</i>	
<b>Performance Evaluation for Mixed Pole Machines with Electromechanical Torque and Rotor Electric Power and Stability Analysis</b> .....	1139
<i>A. Abdel-Khalik, M. I. Masoud, A. L. Mohamadein, B. W. Williams and M. Magdy</i>	
<b>Main Protection Scheme Design and Engineering Application of Multi-Branch Hydro Generator in Zhexi Power Station</b> .....	1144
<i>Yongjun Xia, Gang Hu, Xianggen Yin, Zhe Zhang and Wei Chen</i>	
<b>Design of a Flux Weakening Control Scheme for DC Motor Drives Featuring Full Voltage Operation</b> .....	1148
<i>S. Bolognani, A. Faggion and L. Sgarbossa</i>	
<b>Optimized Control Technique of Single Inverter Dual Motor AC-Brushless Drives</b> .....	1153
<i>M. S. D. Acampa, A. Del Pizzo and D. Iannuzzi</i>	
<b>An Algorithm for Design Considerations on Semiconductor Rectifier Transformers</b> .....	1159
<i>M. Sedighizadeh, M. Khatibi and M.T. Keshavarzi</i>	
<b>Hybrid Cascaded H- Bridge Multilevel Inverter for Fuel Cell Power Conditioning Systems</b> .....	1164
<i>R.Seyezhai and B.L.Mathur</i>	
<b>Modelling and Simulation of Variable Frequency Fed Induction Motors</b> .....	1169
<i>Abdulatif -A-M-Shaban</i>	
<b>A Current Source Power Supply for Driving of Series Connected Power Switch</b> .....	1174
<i>Ahmad Ale Ahmad and Adib Abrishamifar</i>	
<b>Mathematical Modeling and Current Control of a Voltage Source Converter</b> .....	1178
<i>Ambrož Božiček, Boštjan Blažič and Igor Papič</i>	
<b>A Discussion about the Effect of the MID Directive on the Calibration of Electrical Energy Meters</b> .....	1183
<i>A. Bernieri, L. Ferrigno, M. Laracca and C. Luongo</i>	
<b>Control Scheme of A Novel Capacitive-Coupled STATCOM</b> .....	1188
<i>Chi-Seng Lam, Fan Ng and Man-Chung Wong</i>	
<b>Controller Design of a New DC Power Supply With Reduced Number of Switches</b> .....	1193
<i>Ali Dastfan and Farshid Behrangi</i>	
<b>Investigation of A Novel Capacitive-Coupled STATCOM: Modeling and Simulation</b> .....	1198
<i>Chi-Seng Lam and Man-Chung Wong</i>	
<b>The Controllable Non-linear Reactor in Electronic Ballasts Applications: A Behavioral Analysis of the Inductance as a Function of both ac and dc Bias Currents</b> .....	1203
<i>M. S. Perdigão, E. S. Saraiva, J. M. Alonso and Murilo Cervi</i>	

# Table of Contents

<b>IGBT Tail Current Reduction by Current Injection Technique</b> .....	1208
<i>S. Eio and N.Y.A Shammass</i>	
<b>Thermoelectric Technology: Micro-electrical and Power Generation Properties</b> .....	1212
<i>C.A. Gould, N.Y.A. Shammass, S. Grainger and I. Taylor</i>	
<b>Three Phase Passive Bridge Rectifier with Low Distortion Input Current and Boosted DC Output Voltage</b> .....	1217
<i>O.A. Ahmed and J.A.M. Bleijs</i>	
<b>Calculation of Time-varying Equivalent Inductance and Resistance of Helical Flux Compression Generators Using 2-D Filamentary Method and Dynamic Matrix Concept</b> .....	1222
<i>M. H. Khanzade, Y.Alinejad-Beromi and A. Shoulaie</i>	
<b>New Programmable Calibration System for Highly Accurate AC Current Measurements at NIS, Egypt</b> .....	1227
<i>A. H. Ahmed, M. Halawa, S. M. Moussa, E. H. Shehab Eldin and E. M. El-Refae</i>	
<b>A New PID-Fuzzy Controller for DC/DC Converters</b> .....	1232
<i>Mohammad Sarvi and Nafiseh NamazyPour</i>	
<b>Comparison of Structure Topologies for Hybrid Filters</b> .....	1236
<i>Man-Chung Wong, Chi-Seng Lam and Ning-Yi Dai</i>	
<b>A Control Method of Charging and Discharging Lithium-Ion Battery to Prolong its Lifetime in Power Compensator for DC Railway System</b> .....	1241
<i>Taku Niwa, Naoto Nagaoka and Nobutaka Mori</i>	
<b>Automatic Equivalent-Circuit Estimation System for Lithium-Ion Battery</b> .....	1246
<i>Tomoyuki HIRAI, Akira OHNISHI, Naoto NAGAOKA, Nobutaka MORI, Akihiro AMETANI and Shigeki UMEDA</i>	
<b>New Simulation Algorithm for Electric Transportation Supply System Sizing</b> .....	1251
<i>Morris Brenna, Federica Foadelli, Dario Zaninelli and Giulio Burchi</i>	
<b>Reversed Diode Earthing Scheme in DC Traction Power System</b> .....	1256
<i>M. M. Alamuti, A. Zare and M. Savaghebi</i>	
<b>Effects of Different Earthing Schemes on the Stray Current in Rail Transit Systems</b> .....	1261
<i>S. Jamali, M. M. Alamuti and M. Savaghebi</i>	
<b>PM Motors for Hybrid Electric Vehicles</b> .....	1266
<i>Massimo Barcaro, Nicola Bianchi and Freddy Magnussen</i>	
<b>All Electric Ship Power Stations: Dynamic Coordination between Controls and Protections</b> .....	1271
<i>Stefano Quaia</i>	
<b>Power Engineering Education using NEPLAN software</b> .....	1276
<i>Dorin Bica, Catalin Moldovan and Marius Muji</i>	
<b>The Challenges and Opportunities of Workforce Development in Power Engineering and How the IEEE PES is helping</b> .....	1279
<i>Noel N. Schulz and Wanda Reder</i>	
<b>The U.S. ESRDC Advances Power System Research for Shipboard Systems</b> .....	1283
<i>Noel N. Schulz, Robert E. Hebner, Steinar Dale, Roger Dougal, Scott Sudhoff, Ed Zivi and Chryssostomos Chryssostomidis</i>	
<b>Electrical Power System Security Analysis Using Problem-Based Learning</b> .....	1287
<i>M. M. Travassos Valdez, C. I. Faustino Agreira, C. Machado Ferreira and F. P. Maciel Barbosa</i>	
<b>Power Sector Reform in Indonesia What Should be Policy for the State Owned Power Company (PLN)</b> .....	1291
<i>C.S. Özveren, David King and Krisno Mursitojati</i>	
<b>Signal Based Fault Detection for Stator Insulation in Electric Motors</b> .....	1296
<i>Emine Ayaz, Murat Ucar, Serhat Seker and Belle R. Upadhyaya</i>	