

2011 International Conference on Power and Energy Systems

(ICPS 2011)

**Chennai, India
22 – 24 December 2011**



IEEE Catalog Number: CFP1102H-PRT
ISBN: 978-1-4577-1508-2

TABLE OF CONTENTS

The Impact Of IP Sets For Establishment Of Baseline Data In Power Distribution Of Electric Utilities Under RAPDRP	1
<i>C. Sekhar, D. Rao, C. Jairam, T. Raghunatha, V. Bharathi, S. Kumar, K. Madhugiri</i>	
Transmission Cost Allocation With And With Out Losses In Restructured Power System	11
<i>P. Varma, V. Sankar</i>	
Improvement of Dynamic Performance of Three Area Thermal System Under Deregulated Environment Using AC Tie-line Parallel with HVDC Link	17
<i>T. Kumar, V. Krishna, N. Ramana</i>	
Use of Support Vector Machine for Wind Speed Prediction	23
<i>P. Sangita, S. Deshmukh</i>	
Design and Fabrication of a Low Cost Analog Electronic Load Controller for a Self Excited Induction Generator Supplying Single-Phase Loads	31
<i>S. Murthy, R. Ahuja, J. Chaudhary</i>	
An Intelligent Control Of Solid Oxide Fuel Cell Voltage	35
<i>K. Bhuyan, K. Mahapatra</i>	
Classical Controller for Coordination of Wind-Solar-Hydro Energy Conversion Systems in Isolated Region	41
<i>J. Prabhakar, K. Ragavan</i>	
Investigation Of Neem Ethyl Ester For Electrification	47
<i>G. Gowri, M. Kannan, A. Murugesan</i>	
Variable Speed Stand-alone Wind Energy Conversion System Using Synchronous Generator	53
<i>S. Sharma, B. Singh</i>	
Optimization of Hybrid PV/Wind Power System for Remote Telecom Station	59
<i>S. Paudel, J. Shrestha, F. Neto, J. Ferreira, M. Adhikari</i>	
Analysis, Design and Implementation of Soft Switching in a Synchronous Converter	65
<i>R. Reddy, N. Lakshminarasamma</i>	
Small Signal Stability Analysis Of Grid Connected Photo Voltaic Distributed Generator System	71
<i>S. Ravichandran, S. Dasan, R. Devi</i>	
Photovoltaic Array Based Multilevel Inverter for Power Conditioning	77
<i>S. Rajasekar, R. Gupta</i>	
Effect of Doubly Fed Induction Generator based Wind Farms on the Small Signal Stability of Multi-machine Power System	83
<i>J. Chaudhary, A. Mitra, D. Chatterjee</i>	
Performance Study of Isolated Hybrid Power System with Multiple Generation and Energy Storage Units	89
<i>N. Jayalakshmi, D. Gaonkar</i>	
Single-Loop Voltage and Frequency Control Schemes for SEIG-Battery Storage Based Stand-Alone Three-Phase Four-Wire RECS	94
<i>P. Chauhan, J. Chatterjee</i>	
Reduction of Grid Current Harmonic Injection in Matrix Converter Controlled Induction Generator for Wind Applications	100
<i>S. Subramanian, J. Chatterjee, V. Rajasekhar, A. Kondalarao</i>	
Shaft Input Adaptive Source Current Compensation Based Novel Voltage and Frequency Control of Autonomous Induction Generator	106
<i>J. Chatterjee, P. Chauhan, P. Murty, S. Mandal</i>	
On the Optimal Tuning of FACTS based Stabilizers for Dynamic Stability Enhancement in Multimachine Power Systems	112
<i>J. Krishnan, N. Kumar, M. Khan</i>	
Performance Improvement of Power Systems Using Hybrid Power Flow Controller	120
<i>N. Merritt, D. Chatterjee</i>	
GPS Synchronized Current Differential Protection of Mutually Coupled Line	126
<i>S. Unde, S. Dambare</i>	
Analysis Of Distance Relay Trip Regions For EHV And UHV Transmission Lines	132
<i>K. Ravishankar, D. Thukaram</i>	
A Novel Out-Of-Step Detection Algorithm Using Angle of Power Signal	138
<i>R. Dubey, S. Samantaray, B. Babu, S. Kumar</i>	

Apparent Impedance seen at Generator Terminal for Faults on HV Side of Delta-Star Generator Transformer.....	144
<i>A. Sai, S. Srivastava, S. Ganesan, S. Maturu</i>	
Modelling of Adjustable Speed AC Drives for Harmonic Studies using Kalman Filtering Algorithm	151
<i>S. Gunda, D. Sarma</i>	
A Proposal for Distributed Architecture for Synchronized Phasor Measurement Unit.....	157
<i>G. Gajjar, S. Soman</i>	
Coherence Function Method of Detection of Fault in a Power Transformer during Impulse Test	164
<i>K. Reddy, M. Kumar, B. Singh, M. Suryakalavathi</i>	
Partial Discharges in Stator Winding Insulation of Turbine Generators-A Case Study and Remedies	170
<i>P. Kumar, M. Tech, J. Amarnath, B. Singh</i>	
Three-dimensional Equivalent Circuit Analysis of Water Tree	175
<i>M. Suzuki, N. Yoshimura</i>	
Predictive Dynamic Arc Model of the Pre-Flashover Leakage Current on Polymeric Insulators.....	179
<i>C. Muniraj, S. Chandrasekar</i>	
A Core Study on NOX Removal in Diesel Exhaust by Pulsed/AC/DC Electric Discharge Plasma.....	184
<i>S. Mohapatro, B. Rajanikanth</i>	
Horizontal Component Of Electric Field Due To Lightning Return Strokes	190
<i>K. Chandrasekaran, G. Punekar</i>	
Electrical Treeing Behavior In Polymer Nanocomposites Under Different Nanoparticles Size	194
<i>D. Pitsa, M. Danikas</i>	
Computation Of Electric Field Of 100kV FGM Spacer For Gas Insulated Bus Duct Applications	197
<i>M. Naik, J. Amarnath, S. Kamakshiah, A. Varaprasadarao</i>	
An ANN Based Network Reconfiguration Approach for Voltage Stability Improvement of Distribution Network.....	202
<i>P. Kayal, S. Chanda, C. Chanda</i>	
Application of Monte Carlo Simulation for Reliability Cost/Worth Analysis of Distribution System	209
<i>N. Godha, S. Deshmukh, R. Dagade</i>	
Deployment Of System Protection Schemes For Enhancing Reliability Of Power System: Operational Experience Of Wide Area SPS In Northern Regional Power System In India.....	214
<i>V. Agrawal, R. Porwal, R. Kumar, V. Pandey, T. Muthukumar</i>	
Optimal Location And Sizing Of STATCOM For Voltage Security Enhancement Using PSO-TVAC	220
<i>S. Varshney, L. Srivastava, M. Pandit</i>	
Network Congestion Management by Fuzzy Inference using Virtual Flows.....	226
<i>S. Thukaram</i>	
Optimized Voltage And Reactive Power Adjustment In Power Grids Using The Least-Squares-Method: Optimization Of Highly Utilized Power Grids With Stochastic Renewable Energy-Sources.....	232
<i>T. Leveringhaus, L. Hofmann</i>	
Optimal Reactive Power Compensation under Non Sinusoidal Conditions using Current Minimization Method.....	238
<i>U. Mujundar, J. Joshi</i>	
Comparative Analyses of Min-Max and Max-Max Price Penalty Factor Approaches for Multi Criteria Power System Dispatch Problem with Valve Point Effect Loading Using Lagrange's Method	244
<i>S. Krishnamurthy, R. Tzeneva</i>	
A Solution To Unit Commitment Problem By Considering Load To Be A Probabilistic One	251
<i>B. Saravanan, K. Swarup, D. Kothari</i>	
Day Ahead Load Forecasting Models for Holidays in Indian Context.....	257
<i>R. Fernandes, Y. Bichpuriya, M. Rao, S. Soman</i>	
On Critical Mode of Bifurcation Point and Loadability in Shunt Compensated Multi-Bus Power System.....	262
<i>S. Naik, S. Bhat, M. Khedkar</i>	
Modeling and Control of a Multi-Machine Power System with FACTS Controller.....	268
<i>J. Therattil, P. Panda</i>	
Some Aspects of Power System Stabilizer Performance in Subsynchronous Resonance Study.....	274
<i>M. Shashidhara, K. Shubhangi</i>	
Power System Stabilizer Based On Artificial Neural Network	280
<i>J. Kumar, P. Kumar, A. Mahesh, A. Shrivastava</i>	
Linear Programming Approach for State Estimation Incorporating Phasor Measurements.....	286
<i>V. Kumar, D. Thukaram</i>	
CPF, TDS based Voltage Stability Analysis using Series, Shunt and Series–Shunt FACTS controllers for Line Outage Contingency.....	292
<i>G. Kumar, M. Kalavathi</i>	

Identification of Coherent Synchronous Generators in a Multi- Machine Power System Using Support Vector Clustering.....	298
<i>R. Agrawal, D. Thukaram</i>	
A Study of the SMIB Power System Model with Delayed Feedback.....	304
<i>A. Chowdhury, A. Kulhare, G. Raina</i>	
Performance Assessment of an Impedance Based Islanding Detection Method in a Distribution Network with Multiple PV Inverters	310
<i>S. Hesari, M. Hamzeh, H. Toobak</i>	
Optimization Of A Power System With Interior Point Method	316
<i>B. Rao, G. Kumar, R. Kumari, N. Raju</i>	
Effects of Thyristor Controlled Series Capacitor (TCSC) on Oscillations in Tie-Line Power and Area Frequencies in an Interconnected Non-Reheat Thermal Power System.....	322
<i>N. Abraham, A. Parameswaran, R. Abraham</i>	
Correlation and Comparison between Bus Participation Factor and Voltage Sensitivity Factor for Simultaneous and Individual Bus Load Change in Multi Bus Power System	329
<i>S. Naik, M. Khedkar, S. Bhat</i>	
Integral Square Error Minimization Technique for Linear Multi Input and Multi Output Systems.....	335
<i>I. Saaki, P. Chandra Babu, C. Rao, D. Prasad</i>	
Performance Evaluation of AGC of SHP with Multi-Area Power System	340
<i>L. Puthumana, J. Jaleel</i>	
Neural Learning Algorithm based Power Quality Enhancement for Three Phase Three Wire Distribution System Utilizing Shunt Active Power Filter Strategy.....	345
<i>A. Kumar, P. Raj</i>	
I_d-I_q Control Strategy for Mitigation of Current Harmonics with PI and Fuzzy Controllers.....	351
<i>S. Mikkili, A. Panda</i>	
Simulation and RTDS Hardware Implementation of SHAf for Current Harmonics Cancellation Using I_d-I_q Control Strategy with PI and Fuzzy Controllers	357
<i>S. Mikkili, A. Panda</i>	
Empirical Mode Decomposition based Probabilistic Neural Network for Faults Classification.....	363
<i>M. Manjula, S. Mishra, A. Sarma</i>	
Identification of Short Duration Power Quality Disturbances Employing S-transform	368
<i>C. Naik, P. Kundu</i>	
Indirect Voltage Control in Distribution System using Cascade Multilevel Inverter Based STATCOM	373
<i>J. Kumar, B. Das, P. Agarwal</i>	
Fryze Power Theory with Adaptive-HCC based Active Power Line Conditioners.....	379
<i>P. Karuppanan, K. Mahapatra, K. Jeyaraman, J. Viji</i>	
On Comparing the Performance of Genetic Algorithm Optimized PI and Fractional Order PI Controller for Power Quality Enhancement	385
<i>S. Srivastava, A. Manaktala, K. Sadhwani, M. Gupta</i>	
Detection of Power Quality Disturbances in Presence of DFIG Wind Farm Using Wavelet Transform Based Energy Function	391
<i>R. Dubey, S. Samantaray, B. Babu, S. Kumar</i>	
Identification of Power Quality Disturbances using Artificial Neural Networks	397
<i>M. Elango, A. Kumar, K. Duraiswamy</i>	
Neuro-Fuzzy Based Controller For A Shunt Active Power Filter	403
<i>M. Jha, S. Dubey</i>	
Performance Analysis of Series Active Filter under Non Sinusoidal Supply and Non Linear Loading	410
<i>K. Venkatraman, M. Selvan, S. Moorthi</i>	
A New Proposal for Voltage Regulation Multi Feeders/Multibus Systems Using MC-DVR.....	416
<i>P. Naidu, B. Raja</i>	
Effects of Harmonics in Distribution Systems on Temperature Rise and Life of XLPE Power Cables	424
<i>K. Patil, W. Gandhare</i>	
Mitigation Of Harmonics In Grid Integrated Wind Farms	430
<i>K. Munji, R. Bhimasingu</i>	
Performance Improvement in Selective Harmonic Compensation of Shunt Hybrid Active Filter	435
<i>J. Chatterjee, S. Subramanian, D. Bharat, S. Das</i>	
Comparison of Various Voltage Source Inverter based UPQC Topologies.....	441
<i>S. Karanki, M. Mishra, B. Kumar</i>	
Detection of Power Quality Disturbances with Overcomplete Dictionary Matrix and l_1-norm Minimization	448
<i>P. Kathirvel, M. Manikandan, P. Maya, K. Soman</i>	

Power Quality Improvement in DTC Based Induction Motor Drive Using Minnesota Rectifier	453
<i>B. Singh, G. Bhuvaneswari, A. Madishetti</i>	
Development of A Power System Laboratory Supported By Real-time Systems	459
<i>D. Surendra, K. Shubhangi</i>	
Use of Support Vector Machine, Decision Tree and Naive Bayesian Techniques for Wind Speed Classification.....	465
<i>P. Sangita, S. Deshmukh</i>	
Analysis of PI and PR Controllers for Distributed Power Generation System under Unbalanced Grid Faults	473
<i>A. Dash, B. Babu, K. Mohanty, R. Dubey</i>	
Cascaded Multilevel Converter Based DSTATCOM using p-q Theory with DC Link Voltage Balancing.....	479
<i>K. Anuradha, B. Muni, A. Rajkumar</i>	
On Electric Fields in Belted Cables and 3-Phase Gas Insulated Cables.....	485
<i>G. Punekar, T. Nafo, N. Kishore</i>	
Analysis Of The Dendrite On Printed Wiring Board By Soft X-Ray Microscope And THz Imaging: Structure Of The Dendrite In Ion-Migration	489
<i>K. Mitobe, M. Suzuki, N. Yoshimura</i>	
Characteristics Of Paper Oil Insulation By PDC/FDS Method	493
<i>R. Kumar, S. Kumar, J. Rajan, K. Singh</i>	
Estimation Of Sulphur Compounds In Transformer Oil.....	497
<i>A. Akshatha, J. Rajan, K. Singh</i>	
Nanodielectrics: How Does The Presence Of Interfaces Influence Behaviour?	502
<i>T. Tanaka</i>	
High Thermal Conductivity Epoxy/BN Composites with Sufficient Dielectric Breakdown Strength	506
<i>T. Tanaka, Z. Wang, T. Iizuka, M. Kozako, Y. Ohki</i>	
Author Index	