2011 IEEE PES Innovative Smart Grid Technologies – India

(ISGT India 2011)

Kollam, Kerala, India 1-3 December 2011



IEEE Catalog Number: CFP11ISF-PRT

ISBN: 978-1-4673-0316-3

Table of Contents

Smart Grid Implementation Across The Globe: A Survey	1
Transmission Tariff Allocation Using Combined MW-Mile Postage Stamp Methods Babasaheb Kharbas, Manoj Fozdar and Harpal Tiwari	6
Optimal Placement of Phasor Measurement Units for Multi-Area Observability Bipasha Mallick and Saikat Chakrabarti	12
Enhancement of Voltage Stability Index of Distribution System by Network Reconfiguration Including Static Load Model and Daily Load Curve	17
Economic Load Dispatch of a power system with wind energy using Craziness Based Shuffled Frog Leaping Algorithm	23
A Laboratory Prototype of a Smart Grid Based Demand Side Management	28
Experimental Analysis of Nonlinear Dynamics of DC-DC Converters	32
Development of DSP Based High Speed Numerical Distance Relay and its Evaluation Using Hardware in Loop Power System Simulator	37
Impact of Signal Attributes on Autocorrelation Matrix Dimension for Smart Grid Solutions. Sachin Kumar Jain and Srinivas Singh	43
A Cloud Computing Approach for Power Management of Microgrids $Rajeev\ T\ and\ Dr.\ Ashok\ S$	49
Optimal Placement of FACTS Devices using Probabilistic Particle Swarm Optimization K. Sundareswaran, P.Srinivasarao Nayak, Ch Durga Venkatesh and Hariharan B	53
A NOVEL ANALYSIS OF FULL BRIDGE SERIES- PARALLEL RESONANT INVERTER FOR HIGH FREQUENCY APPLICATION	59
Dynamic Voltage Compensator: Transformationless Control Perspective	65
Gencos Optimal Strategic Bidding with Transmission Constraints Using Particle swarm Optimization	71
ANN-based Hybrid State Estimation and Enhanced Visualization of Power Systems Amit Kumar and Saikat Chakrabarti	78
A Novel Wind Energy Conversion System with Power Quality Improvement Features B Shyam, Aswathy B Raj and P.C. Thomas	84

Reliability Analysis of Smart-Grid Generation Pools	39
Principal Component Analysis based Compression Scheme for Power System Steady State Operational Data)5
Sarasij Das and P. S. Nagendra Rao	
Priliminary Design Considerations towards building of a Hybrid Electric Bicycle)1
Effect of unbalance in voltage supply on the detection of mixed air gap eccentricity in an induction motor by Motor Current Signature Analysis)8
Generalized Model of Multi-Phase Induction Motor Drive using Matlab/Simulink11 G $Renukadevi$ and K $Rajambal$.4
An Implicit Sensorless Position/Speed Estimator for the speed control of a Doubly Fed Induction Motor	20
Karthikeyan Anbalagan, Nagamani Chilakapati and Aritra Basu Ray Chaudhury	
Variable Acceleration Coefficient-based Particle Swarm Optimization for Non-Convex Economic Load Dispatch Problem	26
Demand Response in Smart Microgrids	31
Optimal Re-configuration of Micro-grids based on Ranking of Buses	37
MODELING OF WIND TURBINE POWER CURVE	4
Identification of Optimal location of SVC through Artificial Intelligence Techniques14 R Sheeba, Dr. M.Jayaraju, Dr. K.Sundareswaran, Mohammed Mansoor.O and T.N. Shanavas	Į9
A New Expression for Power Factor under Nonsinusoidal Conditions	5
Modelling and Analysis of Emulator for Distributed Generation Sourced Smart Grid Using Digital Signal Controller (TMS320F28335)	60
Analysis of Frequency Control in Isolated Microgrids	57
A Review on Multi-Agent Systems in Microgrid Applications	'3
Series Capacitor Compensation for Radial Distribution Networks	'8

Improvement of Demand Response using Mixed Pumped Storage Hydro Plant
Demand Response: A Decisive Approach for Regulated Market
Improvement of Power Factor in Power Electronic Systems by using a Method of compensation
An Optimum Setting of Controller for a dc-dc converter Using Bacterial Intelligence Technique
Distribution Automation leading to a Smarter Grid
Speed Torque characteristics of Brushless DC motor in either direction on load using ARM controller
Adapted Multilayer Feedforwared ANN Based Power Management Control of Solar Photovoltaic and wind Integrated Power System
Modeling of Broadband Indoor Power Line Channel for various Network Topologies 229 Seema Arora, Vinay Chandna and Mini S. Thomas
Review of Demand Response under Smart Grid Paradigm
An Optimal Design for Piezoelectric Energy Harvesting System
Development of Adaptive Distance Relay for STATCOM Connected Transmission Line 248 Sham M V, Chethan Ks and Panduranga Vittal Koppal
Control of Parallel Operated Inverters
Phasor Measurement Units in the Indian Smart Grid
Demand Responsive Bidding Strategy of a Buyer in Uniform Price Electricity Market 268 $A.K.\ Jain,\ S.C.\ Srivastava,\ S.N.\ Singh\ and\ L.\ Srivastava$
Smart pH Sensor for Condition Monitoring of Insulators in the Smart Grid
Frequency Stabilization Using Solar Smoothing, Leveling, and Time Shifting in a Hybrid Renewable Network

Harmonic filter for Electric Traction System
PSO Based Tuning of FACTS Controllers for Maximizing the Wind Energy Penetration in Power Systems
Sasidharan Sreedharan, Weerakorn Ongsakul, Jai Govind Singh, I Made Wartana and Kittavit Buayai
Indirect Current Control of BTB-VSC Grid Coupling for Cage-Rotor Induction Generator operating in Grid connected and Isolated mode
Smart Grid Communication - Deployment Scenarios in Distribution Network
A Simulated Annealing Method for Solving Multi-Area Unit Commitment Problem in Deregulated Environment
Frequency Restoration using Dynamic Demand Control under Smart Grid Environment 311 Devika Jay and Swarup $K.S$
Evaluation of Control Strategies for parallel Active Filter under Different Supply Voltage Conditions
A Review on Key Issues of Microgrid
A Unified Management system for Smart Grid
SPEED CONTROL OF BRUSHLESS DC MOTOR WITH PI AND FUZZY LOGIC CONTROLLER USING RESONANTPOLE INVERTER
An Improved System Operation for Better Voltage Stability and Reduced Losses 340 $G.\ Vamsi\ Krishna\ Kartheek$
Multi-Agent System for Managing a Power Distribution System with Plug-in Hybrid Electrical Vehicles in Smart Grid
A PSO Solution for Improved Voltage Stability of a Hybrid AC-DC Microgrid
Voltage Control of a Hybrid AC/DC Microgrid in Grid-Connected Operation Mode358 Mohsen Akbari, Masoud Ali Akbar Golkar and Seyyed Masoud Moghaddas Tafreshi
Voltage Control of a Hybrid AC/DC Microgrid in Stand-Alone Operation Mode
A Reformed Capacity Subscription Market in Restructured Power Systems

A Novel Approach for Maintenance Scheduling of Generation Units in Restructured Power System
Seyyed Hamid Elyas, Sogol Babaeinejad Sarookolaee and Asghar Akbari Froud
Economic Analysis and Comparison of Proposed HRES for Stand-Alone Applications at Various Places in Karnataka State
Mathematical Modelling and Simulation of Directly Coupled PV Water Pumping System Employing Switched Reluctance Motor
Remote Detection of Illegal Electricity Usage Employing Smart Energy Meter –A Current Based Technique
OPTIMAL CAPACITOR PLACEMENT IN DISTRIBUTION NETWORKS USING DIFFERENTIAL EVOLUTION INCORPORATING DIMENSION REDUCING POWER FLOW METHOD
A Novel Control Algorithm for Three Phase Multilevel Inverter using SVM