

2021 IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES 2021)

**Bhopal, India
10-11 December 2021**



**IEEE Catalog Number: CFP21TPF-POD
ISBN: 978-1-6654-0237-8**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21TPF-POD
ISBN (Print-On-Demand):	978-1-6654-0237-8
ISBN (Online):	978-1-6654-0236-1

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

ELEVEN-LEVEL INVERTER TOPOLOGY WITH PHOTOVOLTAIC INTERFACE.....	1
<i>Bipasa Patra, Tejal Patil, Pragya Nema, Robin Vasave, Swati Gawali</i>	
DISCRETE INPUT CURRENT ENHANCED BOOST QUASI-Z SOURCE INVERTERS WITH REDUCED CAPACITOR STRESS	6
<i>Vadhya Jagan, Mithun Reddy, Cheruku Swetha</i>	
THE FINANCIAL IMPLICATION OF COVID-19 ON THE INDIAN POWER SECTOR	11
<i>Subhadip Bhattacharya, Rangan Banerjee, Ariel Liebman, Roger Dargaville</i>	
PERFORMANCE ANALYSIS OF DVR AND UPQC TO IMPROVE POWER QUALITY OF THREE-PHASE DISTRIBUTION SYSTEM.....	18
<i>Shivam Tiwari, Rakeshwri Agrawal, Deepak Agrawal, Deepak Verma</i>	
ANALYSIS OF SOLAR POWERED ELECTRIC VEHICLES	23
<i>Shreyas Maitreya, Himani Singh Dangi, Nitesh Singh Naruka, Priyanka Paliwal</i>	
APPLICATION OF FRACTIONAL CALCULUS IN VOLTAGE SOURCE CONVERTERS	27
<i>Monika Sharma, Bharat Singh Rajpurohit</i>	
REDUCTION IN POWER CONSUMPTION VIA INTEGRATION OF CVR WITH NETWORK RECONFIGURATION AND VAR CONTROL	32
<i>Neha Smitha Lakra, Baidyanath Bag</i>	
COORDINATED ALLOCATION OF ELECTRIC VEHICLE CHARGING STATIONS AND CAPACITORS IN DISTRIBUTION NETWORK	37
<i>Mohd Bilal, Astitva Kumar, Mohammad Rizwan</i>	
IMPACT OF ENERGY STORAGE ON TWO-AREA INTERCONNECTED POWER SYSTEM WITH ADVANCED FUZZY-PID CONTROLLER	43
<i>Adarsh Kumar, Rishabh Verma, Diljinder Singh</i>	
DELOADING ESTIMATION OF A VARIABLE SPEED WIND POWER SYSTEM PARTICIPATING IN FREQUENCY REGULATION	49
<i>Ganesh P. Prajapat</i>	
IMPROVED MODELING OF BDFRG IN WIND POWER GENERATION APPLICATION	54
<i>Manish Paul, A. K. Das</i>	
FUZZY BASED SOLAR MPPT FOR ELECTRIC VEHICLE APPLICATION	58
<i>Shaik Shahida Parveen, Sushma Gupta, Savita Nema</i>	
A REVIEW AND ANALYSIS OF TOPOLOGIES OF LIGHT EMITTING DIODE (LED) DRIVERS.....	63
<i>Neha Gupta, Deepak Verma</i>	
DC SIDE CONTROLLERS FOR GRID CONNECTED HYBRID RENEWABLE ENERGY SOURCES	69
<i>Vinay Kumar Tatikayala, Shishir Dixit</i>	
ANALYSIS OF PARITY-BASED SEARCH ALGORITHMS FOR EXECUTION OF TARGET NODE IN RELATION TO AUTOMATION APPLICATIONS	76
<i>Yogita Pimpale, Rajeev Kanday, Sachin Gupta</i>	

ELECTRIC AND HYBRID VEHICLES – A COMPREHENSIVE OVERVIEW.....	81
<i>Sesha Gopal Selvakumar</i>	
3-D PARTICLE TRAJECTORY TRACKING AND CHARACTERIZATION OF ELECTRON BEAM PARAMETERS OF HIGH POWER ELECTRON GUN.....	87
<i>Vanya Goel, Amitava Roy, Namita Maiti</i>	
REVIEW OF DEMAND SIDE MANAGEMENT WITH THERMOSTATICALLY CONTROLLABLE LOADS	92
<i>Sourav Chakraborty, Susmita Kar, Deepak Kumar</i>	
DESIGN AND FINITE ELEMENT ANALYSIS OF BRUSHLESS DOUBLY FED RELUCTANCE MACHINE FOR VARIABLE SPEED APPLICATIONS	97
<i>M. Kumar, S. Das</i>	
MULTI-OBJECTIVE OPTIMIZATION PROBLEM USING HYBRIDIZED KRILL HERD ALGORITHM.....	103
<i>Amarjeet Kaur, Lakhwinder Singh, J. S. Dhillon</i>	
OPERATIONAL LOSSES OF A SOLAR POWER PLANT: A CASE STUDY.....	108
<i>Ashwin Sharma, Nikunj Singh, Suresh Kumar Gawre</i>	
USE OF PHASE CHANGE MATERIAL (PCM) AND AL ₂ O ₃ NANOFLUIDS IN PYRAMIDAL SOLAR STILL.....	114
<i>D. Srinivas, Avssks Gupta</i>	
DETECTING FAULTS IN POWER TRANSFORMERS USING WAVELET TRANSFORM	121
<i>Somiya Pant, R. K. Nema, Sushma Gupta</i>	
MITIGATION OF COGGING TORQUE FOR THE OPTIMAL DESIGN OF BLDC MOTOR	126
<i>Rupam, Sanjay Marwaha</i>	
I-GWO ALGORITHM BASED SOLAR PHOTOVOLTAIC MODULE PARAMETER SELECTION	131
<i>V. Raja Kumar, Sravana Kumar Bali, Ramesh Devarapalli</i>	
ANALYSIS OF PRACTICAL RESULT AND MATLAB SIMULATION OF LIGHTNING IMPULSE TEST ON TRANSFORMER	136
<i>Lavkush Kushwaha, Leena H. Roy, Sudeep Mohaney, Manoj Hirani, Abhishek Verma</i>	
RENEWABLE MICROGRIDS WITH ECONOMIC AND ENVIRONMENTAL BENEFITS: A REVIEW	141
<i>Sunita Shukla, Manjaree Pandit</i>	
SMART NAVIGATION DETECTION USING DEEP-LEARNING FOR VISUALLY IMPAIRED PERSON.....	147
<i>Nitin Kumar, Anuj Jain</i>	
A REVIEW OF MODERN VIRTUAL INERTIA CONTROL STRATEGIES FOR MICROGRID IMPLEMENTATION	152
<i>Anirudh Pratap, S. K. Sharma, Avani Khandelwal</i>	
TRANSACTIVE ENERGY MANAGEMENT OF SOLAR INTEGRATED VILLAGES IN INDIA.....	158
<i>Y Tejaswini, Prerna Jain</i>	

CLASSIFICATION OF POWER QUALITY DISTURBANCES IN EMERGING POWER SYSTEM USING S-TRANSFORM AND SUPPORT VECTOR MACHINE.....	164
<i>Ravishankar Kankale, Sudhir Paraskar, Saurabh Jadhao</i>	
DISTRIBUTED OPTIMIZATION IN POWER SYSTEM OPERATION: A COMPARATIVE REVIEW	170
<i>Debabrato Mukherjee, Satish Sharma</i>	
A NOVEL 3-PHASE SYMMETRIC/ASYMMETRIC REDUCED DEVICE COUNT MULTILEVEL INVERTER FOR ELECTRIC DRIVE APPLICATIONS	177
<i>Dilip Kumar Patel, Dhananjay Kumar, Pankaj Swarnakar, Rishi Kumar Singh</i>	
A BIPOLAR MULTILEVEL STRUCTURE FOR DC/AC CONVERSION WITH REDUCED DEVICE COUNT.....	183
<i>Niraj Kumar Dewangan, Dhananjay Kumar, Rajesh Kumar Nema, Krishna Kumar Gupta</i>	
A HYBRID APPROACH FOR TARGET DRUG DELIVERY WITH MICROWAVE THERMAL ABLATION.....	188
<i>Simran Kaur, Surita Maini</i>	
ANALYSIS OF AIR GAP INDUCTANCE AND ITS EFFECTS ON TORQUE PROFILE OF SWITCHED RELUCTANCE MOTOR.....	192
<i>Avinash Kumar, Sanjay Marwaha, Manpreet Singh Manna</i>	
OPTIMAL DEFENCE RESOURCE ALLOCATION FOR POWER TRANSMISSION LINES USING GAME THEORY	197
<i>Mahesh Gandra, Deep Kiran, Kush Khanna</i>	
BIOMASS AVAILABILITY AND BIOMASS-BASED GENERATING UNITS IN NORTH INDIA: A REVIEW	202
<i>Pradeep Kumar, Rajneesh Pawar, Sandeep Dhundhara</i>	
OPERATION ANALYSIS OF GRID INTEGRATED SOLAR MICRO HYDRO HYBRID SYSTEM FOR RURAL COMMUNITY	207
<i>Susmita Bandyopadhyay, Vipina Valsan, P Kanakasabapathy</i>	
RANDOM FOREST FOR HEART DISEASE DETECTION: A CLASSIFICATION APPROACH.....	213
<i>Sanjay Dhanka, Surita Maini</i>	
SMARTPHONE-BASED CNN-GRU FRAMEWORK FOR HUMAN ACTIVITY RECOGNITION.....	216
<i>Updesh Verma, Pratibha Tyagi, Manpreet Kaur</i>	
OPTIMIZING THE POSITION OF GRAPHENE OXIDE ABSORBER TO ENHANCE THE RADIATION PATTERN OF ANTENNA ARRAY	220
<i>Surekha Rani, Anupma Marwaha, Sanjay Marwaha</i>	
DESIGN AND ANALYSIS OF A NEURAL NETWORKS BASED PARALLEL BUCK-BOOST CONVERTER TO IMPROVE STABILITY IN DC MICRO-GRID.....	225
<i>Manoj Varma Ummadisingu, G. V. Nagesh Kumar, V. Rafi</i>	
AN ADAPTIVE INTEGRATED POWER CONVERSION SYSTEM FOR TRACTION AND CHARGING OF ELECTRIC VEHICLES.....	231
<i>P Arunkrishna, C. A. Asha, P. K. Preetha</i>	
AERODYNAMIC DESIGN OF ROTOR OF 1 KW HORIZONTAL AXIS WIND TURBINE.....	237
<i>Sonali Shrivastava, Siraj Ahmed, Vilas Warudkar</i>	

GRAPHENE AND ITS NANOCOMPOSITES BASED MICROWAVE NON-INVASIVE PATCH APPLICATORS FOR MAXIMUM POWER LOCALIZATION.....	242
<i>Alka Singla, Anupma Marwaha, Sanjay Marwaha</i>	
DSP-BASED PWM AC-DC CONVERTER FOR DC VOLTAGE REGULATION WITH LINEAR CONTROL CHARACTERISTICS	247
<i>Vikash Kumar, Savita Nema, Dhananjay Kumar, Rajesh Kumar Nema</i>	
SCHEME TO PROTECT GRID CONNECTED SYSTEM USING SYNCHROPHASOR.....	253
<i>Ankur Kumar Gupta, Rishi Kumar Singh, Mohd. Navaid Ansari</i>	
ASSESSING THE RISK OF RELIABILITY OF THREE PHASE GIS UNDER VARIOUS MULTIPLE ABNORMALITIES	258
<i>K Naga Divya, G. V. Nagesh Kumar, Janaki Pakalapati, B. Sravana Kumar, P. V. S. Sobhan, V. Rafi</i>	
SELECTION OF POWER GENERATION TECHNOLOGY USING A COMBINATION OF CRITIC AND TOPSIS	264
<i>Nishant Thakkar, Priyanka Paliwal, Mukund Subhash Ghole</i>	
LOAD PROFILE SEGMENTATION OF VARIOUS LOAD CATEGORIES USING CLUSTERING	269
<i>Bhavana Jangid, Parul Mathruria, Vikas Gupta</i>	
RESEARCH ON ELECTRIC VEHICLE CHARGING SYSTEM: KEY TECHNOLOGIES, COMMUNICATION TECHNIQUES, CONTROL STRATEGIES AND STANDARDS	275
<i>Nivedita Naik, Madhu G M, C. Vyjayanthi</i>	
ECONOMIC DISPATCH IN RENEWABLE ENERGY BASED MICROGRID USING MANTA RAY FORAGING OPTIMIZATION.....	281
<i>Vimal Tiwari, Hari Mohan Dubey, Manjaree Pandit</i>	
PLANNING AND CONTROL TECHNIQUES OF SMART GRIDS.....	287
<i>Shubhajyoti Mondal, Aashish Kumar Bohre</i>	
APPLICATION OF AN APPLIANCE SCHEDULING ALGORITHM FOR DEMAND RESPONSE PROGRAM	293
<i>Mukund Subhash Ghole, Priyanka Paliwal, Nishant Thakkar, Tripta Thakur</i>	
EXPERIMENTAL ANALYSIS OF EFFECT OF TUNING PARAMETERS ON THE PERFORMANCE OF DIVERSITY-DRIVEN MULTI-PARENT EVOLUTIONARY ALGORITHM.....	298
<i>Sumika Chauhan, Manmohan Singh, Ashwani Kumar Aggarwal</i>	
DETECTION OF PRESSURE POINTS ON THE RESIDUAL LIMB IN TRANSTIBIAL AMPUTATION USING THERMAL IMAGING.....	304
<i>Bhaskar Pandey, Ajat Shatru Arora</i>	
PERFORMANCE ANALYSIS OF MODEL PREDICTIVE CONTROL FOR CASCADED TANK LEVEL CONTROL SYSTEM.....	307
<i>Bhawesh Prasad, Raj Kumar, Manmohan Singh</i>	
DETECTION OF FAULTY REGIONS IN POWER DISTRIBUTION GRID WITH LIMITED MEASUREMENT.....	313
<i>Deepayan Das, Sukalyan Maji, Partha Kayal</i>	

OPTIMAL GENERATION SCHEDULING OF ELECTRICAL POWER SYSTEM BY USING HYBRID METAHEURISTIC SEARCH TECHNIQUE	318
<i>Ashutosh Bhadoria, Sanjay Marwaha</i>	
SYSTEM FREQUENCY RESPONSE BASED OPTIMUM LOAD SHEDDING FOR INDUSTRIAL POWER SYSTEM	323
<i>Mukesh Kumar Kirar</i>	
MODEL PREDICTIVE TORQUE CONTROL OF SWITCHED RELUCTANCE MOTOR DRIVE.....	328
<i>Gantasala Bhavana, B L Narasimharaju, P Vijaya Vardhan Reddy, K Vijay Babu</i>	
REAL TIME IMPLEMENTATION OF DROOP CONTROLLED WIND DFIG SYSTEM.....	333
<i>Narayan Prasad Gupta, Preeti Gupta, Priyanka Paliwal</i>	
PLANNING OF RENEWABLE DG WITH DIFFERENT LOAD MODELLING	339
<i>Sourav Chakraborty, Aashish Kumar Bohre</i>	
AN OVERVIEW OF CESC'S 315 KWH GRID CONNECTED BATTERY ENERGY STORAGE SYSTEM	346
<i>Rajib Kumar Das, Eshita Roy, Sayan Koley</i>	
SHORT-RANGE FIXED-HEAD HYDROTHERMAL GENERATION SCHEDULING USING WATER CYCLE ALGORITHM.....	352
<i>Ashok Kumar, J S Dhillon</i>	
APPLICATION OF HYBRID ARTIFICIAL ALGAE ALGORITHM FOR DYNAMIC ECONOMIC LOAD DISPATCH PROBLEM	357
<i>Veenus Kansal, J. S. Dhillon</i>	
ECONOMIC LOAD DISPATCH USING HCGSA.....	363
<i>Avneet Kaur, Manmohan Singh, J S Dhillon</i>	
MULTIOBJECTIVE DYNAMIC ECONOMIC DISPATCH AMALGAMATING SOLAR PV AND WIND POWER GENERATION USING HYBRID SCA.....	369
<i>Gurpreet Kaur, Jaspreet Singh Dhillon</i>	
COMPARATIVE ANALYSIS OF CONVENTIONAL TECHNOLOGIES AND EMERGING TRENDS IN WIND TURBINE GENERATOR	375
<i>Shweta Mehroliya, Anoop Arya, Uliya Mitra, Priyanka Paliwal, Prateek Mundra</i>	
OPTIMAL PMU POSITIONING CONSIDERING THE EFFECT OF ZERO INJECTION BUSES IN ADVANCED GRID MONITORING	381
<i>Mohd. Navaid Ansari, Rishi Kumar Singh, Ankur Kumar Gupta</i>	
A COMPREHENSIVE REVIEW ON FUEL CELL TECHNOLOGIES AND ITS APPLICATION IN MICROGRIDS.....	386
<i>Uliya Mitra, Anoop Arya, Sushma Gupta, Shweta Mehroliya</i>	
GRID INTEGRATED SOLAR PV SYSTEM WITH COMPARISON BETWEEN FUZZY LOGIC CONTROLLED MPPT AND P&O MPPT	393
<i>Abhishek Srivastava, Anushika Nagvanshi, Aditya Chandra, Aditya Singh, Amit Kumar Roy</i>	
AN EXTENSIVE STUDY ON OPTIMIZATION AND CONTROL TECHNIQUES FOR POWER QUALITY IMPROVEMENT	399
<i>Ritu Verma, Suresh K. Gawre, N. P. Patidar</i>	

NETWORK PARTITIONING FOR PARALLEL POWER SYSTEM OPERATION	405
<i>Ajay Kumar Verma, Satish Sharma</i>	
ECONOMIC LOAD DISPATCH USING BLACK WIDOW OPTIMIZATION ALGORITHM.....	411
<i>Kanchan Pawani, Manmohan Singh</i>	
COMPARISON OF DECOMPOSITION-BASED MACHINE LEARNING MODELS FOR MULTI-STEP TIME SERIES FORECASTING OF WIND POWER GENERATION	415
<i>Priyanka Malhan, Monika Mittal</i>	
STABILIZATION OF SYSTEM FREQUENCY USING ADAPTIVE LOAD SHEDDING SCHEME BASED ON ARTIFICIAL NEURAL NETWORK.....	421
<i>Pradeepti Lakra, Sudeep Mohaney</i>	
REVIEW AND ANALYSIS OF DC-DC POWER CONVERTER PERFORMANCE FOR FAST CHARGING OF EVS	427
<i>Reena Singh, Suresh Kumar Gawre, Giribabu Dyanamina</i>	
ALZHEINET: A SHALLOW CONVOLUTION NEURAL NETWORK FOR ALZHEIMER'S DETECTION USING MRI SCANS	432
<i>Sourav Kumar Shukla, Shailja Shukla</i>	
SHALLOW CONVOLUTION NEURAL NETWORK FOR BRAIN TUMOR CLASSIFICATION USING T1-WEIGHTED MRI SCANS.....	435
<i>Sourav Kumar Shukla, Shailja Shukla</i>	
EMPLOYING DEMAND RESPONSE IN ENERGY MANAGEMENT OF MICROGRID USING Q LEARNING.....	439
<i>Akhilesh Chandrakar, Priyanka Paliwal, Anoop Arya</i>	
IMPLEMENTATION AND DESIGN OF NINE LEVEL INVERTER WITH LESSER NUMBER OF SWITCHES USING PWM TECHNIQUE.....	444
<i>Preeti Pateriya, Savita Nema, Pankaj Swarnkar</i>	
MOTOR POWER CALCULATION FOR POWER-TRAIN OF ELECTRIC VEHICLES AND ESTIMATION OF ITS PERFORMANCE PARAMETERS USING MATLAB/SIMULINK.....	448
<i>J. G. Yadav, Yogesh Kumar Yadav, Navneet Kumar</i>	
AN INTELLIGENT FAULT DIAGNOSIS SCHEME FOR PV ARRAY USING MACHINE LEARNING TECHNIQUES.....	454
<i>Laxman Solankee, Avinash Rai, Mukesh Kirar</i>	
CLUSTERING MODELS FOR DEMAND RESPONSE AGGREGATION	459
<i>Abhishek Jain, Bhavana Jangid, Rohit Bhakar, Parul Mathuria, Chandra Prakash Barala, Vikas Gupta</i>	
VARIABLE SPEED PMSM BASED PV-BATTERY POWERED ELECTRIC VEHICLE	466
<i>Deepti Jain, Sushma Gupta, Monika Jain, Shailendra Kumar Dewadi, Jitendra Tandekar</i>	
ENVIRO-ECONOMIC SIZING OF A GRID-CONNECTED HYBRID ENERGY SYSTEM USING TUNICATE SWARM ALGORITHM.....	471
<i>Poonam Singh, Manjaree Pandit, Laxmi Srivastava</i>	
EFFECT OF REHEAT TURBINE ON PERFORMANCE OF AGC OF TWO-AREA THERMAL- THERMAL POWER SYSTEM IN DEREGULATED ENVIRONMENT USING PSO OPTIMIZED PID-N CONTROLLER.....	477
<i>Prashant Khare, More Raju, S C Gupta</i>	

FEM BASED ANALYSIS AND DESIGN OF LINEAR SWITCHED RELUCTANCE MOTOR TOPOLOGIES FOR HIGH SPEED TRANSIT APPLICATION	482
<i>Nisha Prasad, Shailendra Jain, Sushma Gupta</i>	
MULTI OBJECTIVE OPTIMAL PLANNING OF FAST CHARGING STATION AND DISTRIBUTED GENERATORS IN A DISTRIBUTION SYSTEM	488
<i>Ajit Kumar Mohanty, P Suresh Babu</i>	
ARTIFICIAL GORILLA TROOPS OPTIMIZER FOR TUNING POWER SYSTEM STABILIZER CONTROL PARAMETERS	494
<i>Murali Krishna Gude, U. Salma</i>	
DIRECT POWER CONTROL SCHEME WITH VOLTAGE MODULATION CONTROL TECHNIQUE FOR A WEAK GRID CONNECTED VOLTAGE SOURCE CONVERTERS THROUGH BAND PASS FILTER	499
<i>Md Kaisar Azam Ansari, Savita Nema</i>	
VOLTAGE STABILITY ASSESSMENT AND IMPROVEMENT IN POWER SYSTEMS WITH SOLAR PHOTOVOLTAIC PENETRATION.....	504
<i>Chandrakant Dondariya, D. K. Sakravidia</i>	
A SURVEY ON GRID COUPLED POWER CONVERSION DEVICES THAT IMPLEMENT VIRTUAL INERTIA.....	508
<i>Joshua T. Ryan</i>	
REVIEW OF OPTIMIZED FSFCL EFFECTS ON THE TRANSIENT RECOVERY VOLTAGE OF A CIRCUIT BREAKER AT 550 KV.....	513
<i>Banothu Somanna, Sushma Gupta</i>	
DESIGN CONSIDERATIONS OF LINE TRAP TO CATER THE INCREASE IN SYSTEM FAULT LEVEL	518
<i>Rajaramamohanarao Chennu, S Sudhakara Reddy, T Gurudev, Maroti</i>	
LOAD FREQUENCY CONTROL OF MICROGRID INCLUDING SMALL HYDRO POWER PLANT AND DISTRIBUTED GENERATION WITH EV PENETRATION	525
<i>Hiramani Shukla, More Raju</i>	
ON-SITE HEALTH ASSESSMENT OF 765KV BUSHING INSULATION USING VFTD	530
<i>Harish Kumar Sharma, Savita Nema, R K Nema</i>	
MODEL ORDER REDUCTION OF INTERVAL SYSTEMS USING ROUTH APPROXIMATION WITH MID-POINT CONCEPT AND STABILITY EQUATION METHOD	534
<i>Sunil Kumar Gautam, Savita Nema, R K Nema</i>	
AN INTEGRATED OPTIMIZATION ALGORITHM TO SOLVE PROFIT BASED UNIT COMMITMENT PROBLEM.....	539
<i>Jatinder Singh Dhaliwal, J. S. Dhillon</i>	

Author Index