2014 IEEE 2nd International Conference on Electrical Energy Systems

(ICEES 2014)

Chennai, India
7-9 January 2014
### Technical Papers

#### Power Systems

**Date/Time**  
07 January 2014 (Tuesday) / 02:00pm – 03:15pm

**Chair**  
Dr. Jayashree Ravishankar, UNSW, Australia

**Co-Chair(s)**  
Dr. C. Vaithilingam, Head/EEE, KCG College of Technology, Chennai  
Dr. Ashwin Kumar Sahoo, Professor/EEE, SSNCE, Chennai

1. **Improved Harmony Search Algorithm for Economic Emission Dispatch**  
   S. Geethanjali and S. Shanmugapriya
2. **Experimental Setup of a Microgrid with Wind and Solar Power Emulators**  
   Rumman R. Islam, Mingyu Liao, Thai Hau Vo and Jayashri Ravishankar
3. **A New Successive Displacement Type Load Flow Algorithm and its Application to Radial Systems**  
   R. James Ranjith Kumar and P. S. Nagendra Rao
4. **Transmission Lines Main and Backup Fault Clearance - Impact on a Nuclear Power Plant**  
   T. Chandra Kiran and N. Theivarajan
5. **Artificial Intelligence Technique Based Reactive Power Planning Incorporating FACTS Controllers in Real Time Power Transmission System**  
   Kallippatti Ramsamy Vadivelu and G. Venkata Marutheswar
   R. Arul, S. Velusami and G. Ravi
   Karthikeyan Krishnan and Lakshmi Ponnusamy
8. **An Enhanced Time Effective Particle Swarm Intelligence for the Practical Economic Load Dispatch**  
   G. Loganathan, D. Rajkumar, M. Vigneshwaran and R. Senthilkumar
9. **Solving ORPD Problem with Modal Analysis by Differential Evolution**  
   J. Jithendranath and B. Yogesh Babu
10. **SPWM Technique for Reducing Harmonics in Three-Phase Non-Linear Load**  
    R. Zahira, A. Peer Fathima and Ranganath Muthu

#### Energy Systems

**Date/Time**  
08 January 2014 (Wednesday) / 02:00pm – 04:00pm

**Chair**  
Dr. P. Somasundaram, Associate Professor/EEE, Anna University, Chennai

**Co-Chair(s)**  
Dr. V. Jamuna, Professor/EEE, Jerusalem College of Engineering  
Dr. N. B. Muthuselvan, Associate Professor/EEE, SSNCE

11. **Effect of Shading Losses on the Performance of Solar Module System using MATLAB Simulation**  
    V. P. Anand, O. B. Priyan and Bala Pesala
12. **Reference Current Generation Schemes for DFIG with Unbalanced Grid Voltage**  
    C. Nagamani, M. A. Asha Rani, Nikhilesh Prasannakumar and A. Karthikeyan
<table>
<thead>
<tr>
<th>Session</th>
<th>Electrical Drives and Magnetics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time</td>
<td>08 January 2014 (Wednesday) / 02:00pm – 04:00pm</td>
</tr>
<tr>
<td>Chair(s)</td>
<td>Dr. S. Ramkumar, Head/EEE, RMD Engineering College, Chennai</td>
</tr>
<tr>
<td>Co-Chair</td>
<td>Dr. R. Rengaraj, Associate Professor/EEE, SSNCE</td>
</tr>
</tbody>
</table>

**Control of PMBLDC Motor Using Third Harmonic Back EMF Sensing with Zigzag Transformer**
Aakanksha Girolkar and G. Bhuvaneswari

**Modeling and Simulation of PM SM Drive for Remote Inspection of Steam Generator Tubes in PFBR**
K. S. Sree Ranjini, Joel Jose, T. Anuradha, V. Vasan Prabhu and S. Sakthivel

**Design Optimization of Brushless DC Motor Using Particle Swarm Optimization**
N. Umadevi, M. Balaji and V. Kamaraj

**Comparative Analysis of Neural and P-I Controller for PM SM Drive**
V. S. Nagarajan, M. Balaji, V. Kamaraj and B. Seetha

**Comparative Study and Transient Analysis of Winding Shapes in Linear Variable Differential Transformer**
M. Azhagar Raj, V. Meera and P. Janani

**A Novel Approach to Prevent Grid Collapsing based on Frequency Estimation with Increased User Visibility**
Robin K. Justine and S. Sofana Reka

**Advanced Feed-Forward Strategy to Dynamic Control of the Isolated Micro Grids**
Amin Heydari, Hamidreza Koofigar and Jafar Soltanizamani

**Simulation and Emulation of Induction Motor Faults**
J. Karthick, G. S. Ayyapan, S. Rakesh Chandar and R. Kiruba Shankar

**A Novel High Gain Switched Inductor Multilevel Buck-Boost DC-DC Converter for Solar Applications**
Pandav Kiran Maroti, Mahajan Sagar Bhaskar Ranjana and Draxe Kaustubh Prabhakar

**Random Pulse Width Modulation for Performance Improvement of Brushless DC Motor Drive**
V. Krishnakumar, S. J. eevananthan and V. Kamaraj

**Performance Analysis of Three Phase Induction Motor Using Different Magnetic Slot Wedges**
M. Lavanya, P. Selvakumar, S. Vijayshankar and C. Easwaral
Analysis of Linear Switched Reluctance Motor Having Gashed Pole
R. Elevarasan, N. C. Lenin and R. Arumugam

Session
Power Electronics

Date/Time
09 January 2014 (Thursday) / 02:00pm – 04:00pm

Chair
Mr. Madhan Mohan, ABB Industries, Chennai

Co-Chair(s)
Dr. A. N. Arvindan, Professor/EEE, SSNCE
Dr. Mrunal Deshpande, Associate Professor/EEE, SSNCE

Experimental Investigation on Switching Characteristics of High-Current Insulated Gate Bipolar Transistors at Low Currents
Anirudh Guha, Aniket Datta, C. Rangesh Babu and G. Narayanan

Experimental Results on Low Cost Microcontroller Based DC Drive Implementation
A. Datta, D. Ganguly, T. Patra and S. Akhuli

A Novel Interleaved Boost Converter with Voltage Multiplier Cell
R. Girish Ganesan and M. Prabhakar

Design of Coefficient Diagram Method (CDM) based PID Controller for Double Integrating Unstable System
K. Kalpana and B. Meenakshipriya

Investigation for Harmonic Mitigation in the Line and Neutral Currents of Three-Phase Four-Wire System Feeding Two-Pulse Rectifiers with Balanced and Unbalanced Load using Zig-Zag Transformer
A. N. Arvindan and C. Sanal

Interleave Isolated Boost Converter as a Front End Converter for Fuel Cell Applications
K. Senthilkumar, Mule Sai Krishna Reddy, D. Elangovan and R. Saravanakumar

Performance Investigation of FPGA Controlled Central Three-Level Diode Clamped Inverter in Two-Stage Solar Photo Voltaic (SPV) System
Dogga. Raveendra, Rahul Kumar and Shailendra Singh

Comparative Analysis of Simple Modulation Technique and SVM of Matrix Converter
V. Rajasekhar, J. K. Chatterjee, Shankar Subramanian and Adapa Kondalarao

High Gain Hybrid DC-DC Converter
Abhishek Srivastava and M. Prabhakar

Non Isolated High Gain High Power DC-DC Converter
B. Sri Revathi and M. Prabhakar

High Gain High Power Non-Isolated DC-DC Converter for Renewable Energy Applications
B. Sri Revathi and M. Prabhakar

Experimental Study on Switching Characteristics of an Inverter Leg Consisting of IGBTs of Dissimilar Makes
Subhas Chandra Das, G. Narayanan and Arvind Tiwari
<table>
<thead>
<tr>
<th>Session</th>
<th>Power Electronics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time</td>
<td>09 January 2014 (Thursday) / 02:00pm – 04:00pm</td>
</tr>
<tr>
<td>Chair</td>
<td>Dr. Ranganath Muthu, Professor/EEE, SSNCE</td>
</tr>
</tbody>
</table>
| Co-Chair(s)  | Dr. Nalin Kant Mohanthy, Professor/EEE, SVCE, Chennai  
|              | Dr. M. Senthilkumaran, Associate Professor/EEE, SSNCE |

- **Analysis, Design and a Comparative Study of ZVS-ZVT Buck Topologies for Battery Charger Application**  
  Greeshma K. Viswanathan, Rose Mary S. Palackal, Kavya Gunda, D. Elangovan and R. Saravanakumar  
  Pages 241

- **Study of Multilevel Sinusoidal PWM methods for Cascaded H-Bridge Multilevel Inverters**  
  S. N. Aditya and S. Raghu Raman  
  Pages 249

- **High Voltage Improved Trans-Z-Source Inverter**  
  S. Divya and Vedavalli Prabhu  
  Pages 255

- **Performance Investigation of Three-Port Converter for Hybrid Energy Systems**  
  R. Parthiban and K. Rajambal  
  Pages 261

- **A Comparative Study of Youla and PID Control Algorithms for Regulation of Output Voltage of Buck Converter**  
  Nivedita Pati  
  Pages 267

- **A Ninelevel Multilevel Inverter with DC Link Switches**  
  C. K. Sruthi and P. Saritha  
  Pages 272

- **An Isolated Dual-Input Converter for Hybrid Power System**  
  G. Jayalashmi and R. Elantherayan  
  Pages 277

- **Voltage Control of Self-Excited Induction Generator**  
  K. Sowndarya, R. Essaki Raj and C. Kamalakannan  
  Pages 283

- **Design and Analysis of Multi-Phase Permanent Magnet BLDC Generator for Domestic Wind Turbine Applications**  
  B. Janarthanan, P. Selvakumar, A. Jagadeeshwaran and S. Vijayshankar  
  Pages 290

- **A Novel Seven Level Inverter with Reduced Number of Switches**  
  Megha S. Varna and Jenson Jose  
  Pages 294

- **FPGA Controlled High Gain Bi-Directional DC-DC Converter (BDC) for Energy Storage of Solar Power**  
  Dogga. Raveendhra, Peerzada Ridwan Ul Zaman and Kumar Govind  
  Pages 300