

**CENCON 2017
30-31 Oct 2017**

Draft Technical Program

CONFERENCE SCHEDULE

| MONDAY, 30 OCT 2017 | |
|----------------------------|--------------------------------|
| 0800-0845 | REGISTRATION |
| 0845-0900 | WELCOMING SPEECH |
| 0900-0945 | KEYNOTE ADDRESS 1 |
| 0945-1030 | KEYNOTE ADDRESS 2 |
| 1030-1100 | TEA BREAK |
| 1100-1220 | SESSION 1A, 1B, 1C (11 papers) |
| 1220-1400 | LUNCH |
| 1400-1520 | SESSION 2A, 2B, 2C (12 papers) |
| 1520-1540 | TEA BREAK |
| 1540-1640 | SESSION 3A, 3B, 3C (11 papers) |

| TUESDAY, 31 OCT 2017 | |
|-----------------------------|--------------------------------|
| 0900-1020 | SESSION 4A, 4B, 4C (10 papers) |
| 1020-1040 | TEA BREAK |
| 1040-1220 | SESSION 5A, 5B, 5C (14 papers) |
| 1220-1400 | LUNCH |
| 1400-1520 | SESSION 6A, 6B (7 papers) |
| 1520-1540 | TEA BREAK |

OVERVIEW OF TECHNICAL PROGRAM

Monday, 30 Oct. 2017

Morning Session

Keynote 1

Keynote 2

1A Photovoltaic System 1

1B Multilevel Inverter

1C Power Electronic Converters 1

Afternoon Session

2A Energy Storage System

2B Power Electronic Converters 2

2C Renewable Energy 1

3A Motor Drives 1

3B Z-Sources Inverters

3C Photovoltaic System 2

Tuesday, 31 Oct. 2017

Morning Session

4A Smart Grid and Energy Storage

4B Renewable Energy 2

4C Motor Drives 2

5A High Voltage Engineering

5B Inverters

5C DC-DC Converters 1

Afternoon Session

6A DC-DC Converters 2

6B Power Electronic Converters 3

TECHNICAL PROGRAM CENCON 2017

REGISTRATION

Date: 30 Oct 2017, Monday

Time: 0800-0845

KEYNOTE SESSION

Keynote Chair: **Dr Shahrin Md Ayob**

Date: **30 Oct 2017, Monday**

Time: **0845-1030**

Venue: **Seminar Room A**

0845-0900 Welcoming speech

0900-0945 Keynote Address 1

Power Electronics - The Key Technology for Renewable Energy System Integration

Prof. Frede Blaabjerg; Aalborg University, Aalborg, Denmark

0945-1030 Keynote Address 2

High Altitude Wind Energy Power Generating System

Prof. Sanjib Kumar Panda; National University of Singapore, Singapore

SESSION 1A Photovoltaic System 1

Session Chair: **Kermadi Mostefa**

Date: **30 Oct 2017, Monday**

Seminar Room: **Seminar Room A**

1100-1120 **1A.1**

A New Maximum Power Point Tracking Method for PV String Under Partial Shading Condition

Wi Yi Kuo and Chih-Chiang Hua (National Yunlin University of Science and Technology, Taiwan)

1120-1140 **1A.2**

Modified Perturb and Observe MPPT with Zero Oscillation in Steady-State for PV Systems Under Partial Shaded Conditions

Yi-Min Chen and Chih-Chiang Hua (National Yunlin University of Science and Technology, Taiwan)

1140-1200 **1A.3**

Binary Search Algorithm as Maximum Power Point Tracking Technique for Photovoltaic System Under Partial Shaded Conditions

Meng Chung Tiong, Hamdan Daniyal, Mohd Herwan Sulaiman and Mohd Shafie

Bakar (Universiti Malaysia Pahang, Malaysia)

1200-1220

1A.4

An Optimal Current Controller for Photovoltaic System Based Three Phase Grid Using Whales Optimization Algorithm

Sajid Hussain Qazi (University Technology Malaysia, Malaysia); Mohd Wazir Mustafa (University of Technology Malaysia, Malaysia); Umbrin Sultana (NED UET, Pakistan); Abdul Rauf Bhatti (Universiti Teknologi Malaysia, Malaysia)

SESSION 1B

Multilevel Inverters

Session Chair:

NorJulia Mohamad Nordin

Date:

30 Oct 2017, Monday

Seminar Room:

Seminar Room B

1100-1120

1B.1

Interconnection and Damping Assignment Passivity-Based Controller for Cascaded H-bridge Multilevel Inverter

Naziha Ahmad Azli (Universiti Teknologi Malaysia, Malaysia); Nur Huda Ramlan (Universiti Teknologi Malaysia, Universiti Malaysia Pahang, Malaysia); Hanifah Jambari and NorJulia Mohamad Nordin (Universiti Teknologi Malaysia, Malaysia)

1120-1140

1B.2

Analysis of Switches Blocking Voltages in A Voltage Taps Based Cascaded Multilevel Inverter Topology

Ahmad Syukri Mohamad (Universiti Kuala Lumpur, Malaysia); Mohd Amran Mohd Radzi and Nashiren Farzilah Mailah (Universiti Putra Malaysia, Malaysia); Mohammad Lutfi Othman (Universiti Putra Malaysia; Center for Advanced Power and Energy Research, Malaysia)

1140-1200

1B.3

FPGA Hardware-in-loop Co-simulation for THIPWM Controlled Multilevel Inverter

Ravikant Pandey (Kyushu Institute of Technology, Japan); Ravi Nath Tripathi (Kyushu Institute of Technology, Japan); Tsuyoshi Hanamoto (Kyushu Institute of Technology, Japan)

SESSION 1C

Power Electronic Converters 1

Session Chair:

Rahimi Baharom

Date:

30 Oct 2017, Monday

Seminar Room:

Seminar Room C

1100-1120

1C.1

Transformerless DC Traction Power Conversion System Design for Light-Rail-Transit (LRT)

Tiffany Chua Zheng Yun, Ong Ying Teik and Chuen Ling Toh (Universiti Tenaga Nasional, Malaysia)

- 1120-1140 **1C.2**
 A Novel Multiple-Battery Charger with Flying-Capacitor Three-Level Converter and Four-Stage Charging Method for Fast Charging
Hao-Yuan Lin and Chih-Chiang Hua (National Yunlin University of Science and Technology, Taiwan)
- 1120-1140 **1C.3**
 Line Current Improvement of Three-phase Four-wire Vienna Rectifier Using Dead-Beat Control
Kyo-Beum Lee, Jin-Hyuk Park and Yong Dae Kwon (Ajou University, Korea)
- 1140-1200 **1C.4**
 Interleaved Boost Converter for Fuel Cell Application with MPPT Technique
Nur Hidayah Abu Khanipah (Universiti Teknikal Malaysia Melaka; University Malaya, Malaysia); Maaspaliza Azri (Faculty of Engineering; UTeM Malacca, Malaysia); Zulkifilie Bin Ibrahim (Universiti Teknikal Malaysia Melaka, Malaysia)
- SESSION 2A Energy Storage System**
 Session Chair: **Mohd Junaidi Abdul Aziz**
 Date: **30 Oct 2017, Monday**
 Seminar Room: **Seminar Room A**
- 1400-1420 **2A.1**
 State of Charge Estimation and State Space Model Analysis of the Ni-MH Battery System
Hesham Alghodhaifi and Azeem Hafeez (University of Michigan - Dearborn, USA)
- 1420-1440 **2A.2**
 State of Charge Estimation for Liquid Metal Battery Using Kalman Filter
Xian Wang and Zhengxiang Song (Xi'an Jiaotong University, P.R. China); Tao Li (Xi'an Jiaotong University, P.R. China); Geng Yingsan (Xi'an Jiaotong University, P.R. China); Jianhua Wang and Yupeng Cao (Xi'an Jiaotong University, P.R. China)
- 1440-1500 **2A.3**
 Super-capacitor and Li-polymer Battery Hybrid Energy Storage for Kinetic Energy Harvesting Applications
Wang Qi (Hainan University, P.R. China)
- 1500-1520 **2A.4**
 Modeling and Simulation of an Energy Storage Based Multi-Machine Power System for Transient Stability Study
Hailiya Ahsan (NIT Srinagar, India); Miraj Mufti (National Institute of Technology, India)

SESSION 2B Power Electronic Converters 2

Session Chair: **Toh Chuen Ling**
 Date: **30 Oct 2017, Monday**
 Seminar Room: **Seminar Room B**

- 1400-1420 **2B.1**
 Comparison of LCL Resonant Converter with Fixed Frequency, and Variable Frequency Controllers
Mohamed Salem (UTM, Malaysia); Awang Jusoh and Nik Rumzi Nik Idris (Universiti Teknologi Malaysia, Malaysia); Ibrahim Mohamed (Universiti Teknologi Malaysia, Malaysia)
- 1420-1440 **2B.2**
 Analysis to Optimize Output Power of Energy Harvester with Boost Converter in CMOS Rectifier Circuit
Roskhatijah Radzuan (Universiti Teknologi Mara, Malaysia); Mohd Khairul Mohd Salleh (Universiti Teknologi MARA; Applied Electromagnetic Research Group, Malaysia); Rahimi Baharom (Universiti Teknologi MARA, Malaysia)
- 1440-1500 **2B.3**
 Current Control Scheme for Unbalanced Current Distribution in a Four-Phase Converter
Jabbar Yahaya (Universiti Tenaga Nasional, Malaysia); Muhamad Mansor (Universiti Tenaga Nasioanal, Malaysia)
- 1500-1520 **2B.4**
 A Compact and Reliable Pulse Generator Using Dual 555-Timer IC to Produce PWM Method
Nur Faizal (Universiti Teknologi Malaysia, Malaysia); M. Afendi M. Piah (Universiti Teknologi Malaysia; Institute of High Voltage and High Current, Malaysia)

SESSION 2C Renewable Energy 1

Session Chair: **Mohd Zaki Daud**
 Date: **30 Oct 2017, Monday**
 Seminar Room: **Seminar Room C**

- 1400-1420 **2C.1**
 An Analysis of Energy Performance of A Commercial Building Using Energy Modeling
Mohd Fairuz Abdul Hamid and Nor Azuana Ramli (Universiti Kuala Lumpur; International College, Malaysia)
- 1420-1440 **2C.2**
 Voltage Stability Indices Studies on Optimal Location of Wind Power Plant in Distribution Network
Bazilah Ismail (Universiti Kuala Lumpur; UniKL ICOLE, Malaysia); Muhammad Najwan Mat Naain (Univerisiti Kuala Lumpur, Malaysia); Lilik Jamilatul Awal (UniKL ICOLE, Malaysia); Ibrahim Alhamrouni (Universiti Kuala Lumpur, Malaysia)

- 1440-1500 **2C.3**
 A Novel High Output-Gain Cuk Converter Circuit Configuration for Renewable Applications - A Comprehensive Investigation
Adepoju Webster Oluwafemi, Emre Ozsoy and Sanjeevikumar Padmanaban (University of Johannesburg); Viliam Fedák (Technical University of Kosice, Kosice); Vigna K. Ramachandaramurthy (Universiti Tenaga Nasional)
- 1500-1520 **2C.4**
 Analyzing the Static and Dynamic Characteristics of Wind Energy Conversion System Using Wind Turbine Simulator
Muhammad Akram Bhayo (Universiti Teknologi Malaysia and QUEST Nawabshah Pakistan, Malaysia); Mohd Junaidi Abd Aziz, Abdul Halim Mohd Yatim and Nik Rumzi Nik Idris (Universiti Teknologi Malaysia, Malaysia)
- SESSION 3A Motor Drives 1**
 Session Chair: **Dahaman Ishak**
 Date: **30 Oct 2017, Monday**
 Seminar Room: **Seminar Room A**
- 1540-1600 **3A.1**
 A Simple Modification of Frequency Carriers for Improving CFTC-Based DTC of Induction Machines
Ibrahim M Alsofyani and Kyo-Beum Lee (Ajou University, Korea)
- 1600-1620 **3A.2**
 Adaptive Sliding Mode Control of DFIG Fed by Matrix Converter During Grid Faults
Kermadi Mostefa (National Polytechnic School, Algeria), Ali Nesba (mostefa.kermadi@g.enp.edu.dz)
- 1620-1640 **3A.3**
 Improving Flux Regulation of DTC Induction Motor drive by Modifying the index to the FPGA-based Lookup Table
Abdullah Ajan and Nik Rumzi Nik Idris (Universiti Teknologi Malaysia, Malaysia); Sze Sing Lee (University of Southampton Malaysia Campus, Malaysia)
- 1640-1700 **3A.4**
 Sensorless PMSM Drives Using Extended Kalman Filter (EKF)
Nabil Farah, farah and Md Hairul Nizam Talib (UTeM, Malaysia); Jurifa Mat Lazi and Zulkifilie Bin Ibrahim (Universiti Teknikal Malaysia Melaka, Malaysia); Mohamad Syakir Termizi (UTeM, Malaysia); Shahrin Md. Ayob (Universiti Teknologi Malaysia, Malaysia); Mohd Junaidi Abdul Aziz (Universiti Teknologi Malaysia, Malaysia)

SESSION 3B Z-Source Inverters

Session Chair: **Awang Jusoh**
 Date: **30 Oct 2017, Monday**
 Seminar Room: **Seminar Room B**

- 1540-1600 **3B.1**
 Modified PI-SVM for Quasi Z-Source Inverter Under Balanced Load Conditions
Izni Mustafar, Naziha Ahmad Azli and Norjulia Mohamad Nordin (Universiti Teknologi Malaysia, Malaysia)
- 1600-1620 **3B.2**
 CCM and DCM Analysis of quasi-Z-Source Inverter
Jonah Ong (Curtin University Sarawak, Malaysia); Kah Haw Law (Curtin University Sarawak Malaysia, Malaysia); Wendy Pei Qin Ng (Curtin University, Malaysia)
- 1620-1640 **3B.3**
 Applying of MPPT Algorithm in Z Source Inverter for PV Solar Generation
Shamsul Zulkifli (Universiti Tun Hussein Onn Malaysia, Malaysia)

SESSION 3C Photovoltaic System 2

Session Chair: **Tan Chee Wei**
 Date: **30 Oct 2017, Monday**
 Seminar Room: **Seminar Room C**

- 1540-1600 **3C.1**
 Ideality Factor Estimation and Modeling of Monocrystalline PV Module
Rodney H.G. Tan and Landon Hoo (UCSI University, Malaysia); Vigna Kumaran Ramachandaramurthy (Universiti Tenaga Nasional, Malaysia); ChiaKwang Tan (UM Power Energy Dedicated Advanced Centre (UMPEDAC), University of Malaya, Malaysia)
- 1600-1620 **3C.2**
 Comparative Study of Photovoltaic Based Power Converter Topologies for Pumping Applications
Arun Shankar V.K. and S. Umashankar (VIT University, Vellore, India); Sanjeevikumar Padmanaban and Mahajan Sagar Bhaskar (University of Johannesburg, Auckland Park); Vigna K. Ramachandaramurthy (Universiti Tenaga Nasional)
- 1620-1640 **3C.3**
 An Adaptive Sliding Mode Control Technique Applied in Grid-Connected PV System with Reduced Chattering Effect
Kermadi Mostefa (National Polytechnic School, Algeria); Zainal Salam (Universiti Teknologi Malaysia, Malaysia); El Madjid Berkouk (National Polytechnic School of Algiers, Algeria)
- 1640-1700 **3C.4**
 Arc Flash Assessment on Photovoltaic Grid Connected System
Jabbar Yahaya (Universiti Tenaga Nasional, Malaysia); Muhamad Mansor

(Universiti Tenaga Nasional, Malaysia)

SESSION 4A Smart Grid and Energy Storage

Session Chair: **Prof Dr Mairaj ud-din Mufti**

Date: **31 Oct 2017, Tuesday**

Seminar Room: **Seminar Room A**

0900-0920

4A.1

Information Flows and Optimization for an Holistic Industrial Energy Management
Marcel Graus (FIR an der RWTH Aachen, Germany); Steffen Nienke (RWTH Aachen University, Germany); Günther Schuh and Volker Stich (FIR an der RWTH Aachen, Germany)

0920-0940

4A.2

Hybrid Energy Storage System for Life Cycle Improvement
Hanis Farhah Jamahori (Universiti Teknologi Malaysia; Centre of Electrical Energy Systems (CEES), Faculty of Electrical Engineering, Malaysia)

0940-1000

4A.3

Optimal Placement of TCSC in Transmission Network Using Sensitivity Based Method for Multi Objectives Optimization
Noorsakinah Abu Bakar (Universiti Sains Malaysia (USM), Malaysia)

SESSION 4B Renewable Energy 2

Session Chair: **Naziha Ahmad Azli**

Date: **31 Oct 2017, Tuesday**

Seminar Room: **Seminar Room B**

0900-0920

4B.1

A Review on Two Different Systems in Municipal Sewage Treatment Plant
Nor Azuana Ramli and Mohd Fairuz Abdul Hamid (Universiti Kuala Lumpur; International College, Malaysia)

0920-0940

4B.2

A Day-Ahead Generation Scheduling with Demand Response Considering Thermal Cycling Ramp
Wen Shan Tan and Md Pauzi Abdullah (Universiti Teknologi Malaysia, Malaysia); Mohamed Shaaban (Universiti Malaysia Sarawak, Malaysia)

0940-1000

4B.3

A Novel Switched-Inductor Configuration for Modified SEPIC DC-to-DC Converter for Renewable Energy Applications
Pandav Kiran Maroti and Sanjeevikumar Padmanaban (University of Johannesburg); Frede Blaabjerg (Aalborg University, Denmark); Viliam Fedák (Technical University of Kosice, Kosice); Pierluigi Siano (University of Salerno); Vigna K. Ramachandaramurthy (Universiti Tenaga Nasional)

1000-1020

4B.4

In-situ Fast Thermal Detection Method for Large-Scale Photovoltaic Field Under

Shading Conditions

Zahi Omer (United Arab Emirates University; College of Engineering, United Arab Emirates); Hussain Shareef and Moahmed Zareer (United Arab Emirates University, United Arab Emirates)

SESSION 4C Motor Drives 2

Session Chair: **Gobbi Ramasamy**

Date: **31 Oct 2017, Tuesday**

Seminar Room: **Seminar Room C**

0900-0920

4C.1

Performance Evaluation of Permanent Magnet Synchronous Machines Using Analytical Sub-domain Particle Swarm Optimization

Dahaman Ishak (Universiti Sains Malaysia, Malaysia); Mohd Rezal (UniKL MSI, Malaysia); Wael A. Salah (Palestine Technical University - Kadoorie, Palestine)

0920-0940

4C.2

Verification of Actual Mechanical Losses on the Rotor of Induction Machine

Lukas Veg, Jan Laksar and Jan Sobra (University of West Bohemia, Faculty of Electrical Engineering, Czech Republic)

0940-1000

4C.3

A New Potential Balancing Control Strategy of NPC Inverter for DTC Fed Induction Motor

Noor Azida Noor Azlan (Universiti Teknikal Malaysia Melaka, Malaysia)

SESSION 5A High Voltage Engineering

Session Chair: **Nor Hidayah Rahim**

Date: **31 Oct 2017, Tuesday**

Seminar Room: **Seminar Room A**

1040-1100

5A.1

Factors and Models of Pollution Flashover on High Voltage Outdoor Insulators: Review

Ali Ahmed Salem, AAS (University Tun Hussien Onn Malaysia- uthm, Malaysia)

1100-1120

5A.2

Effects of SiO₂ and ZrO₂ on the AC Breakdown Performance of Polyethylene

Nor Hidayah Rahim (Universiti Teknikal Malaysia Melaka, Malaysia); Kwan Yiew Lau (Universiti Teknologi Malaysia, Malaysia); Norasiah Muhamad (Universiti Sains Malaysia, Malaysia); Noraiham binti Mohamad (Universiti Teknikal Malaysia Melaka, Malaysia); Wan Aizan Wan Ab Rahman (Universiti Teknologi Malaysia, Malaysia)

1100-1120

5A.3

The Effect of Non-Isothermal Crystallization on the AC Breakdown Performance of Polyethylene/Silicon Dioxide Nanocomposites

Hazirah Kamarudin (Malaysia Technology University, Malaysia); Kwan Yiew Lau and Wan Aizan Wan Ab Rahman (Universiti Teknologi Malaysia, Malaysia)

1120-1140 **5A.4**
Transformer Insulation Diagnosis Using Hybrid Artificial Intelligence-Modified Particle Swarm Optimisation
Hazlee Azil Illias and Xin Rui Chai (University of Malaya, Malaysia)

SESSION 5B Inverters

Session Chair: **Shamsul Aizam Zulkifli**

Date: **31 Oct 2017, Tuesday**

Seminar Room: **Seminar Room B**

1040-1100 **5B.1**
Real Time Implementation of Three Level Space Vector Pulse Width Modulation Using Arduino Due Board
Zine el abidine Kherroubi (Renault SAS, France)

1100-1120 **5B.2**
Capacitor Voltage Balancing in Switch-Sharing-Based Multilevel Inverter with PI Controller
Zalifah Ramli and Jafferi Jamaludin (University of Malaya, Malaysia); Nasrudin Abdul Rahim (University Malaya, Malaysia)

1120-1140 **5B.3**
Simplified Reference Signal Generator Equation for Single Phase Grid-Tied Photovoltaic Inverters
Noor Syafawati Ahmad (National Taiwan University, Malaysia); Yaow-Ming Chen (National Taiwan University, Taiwan)

1140-1200 **5B.4**
Multi-loop Control Strategies of Three-phase Two-level Current Source Inverter for Grid Interfacing Photovoltaic System
Syahrul Ashikin Azmi, Mohammad Faridun Naim Tajuddin, Mohd Fayzul Mohammed and Leong Jenn Hwai (Universiti Malaysia Perlis, Malaysia)

1200-1220 **5B.5**
A Hybrid Multilevel Inverter with Reduced Power Electronic Components with Unipolar Trapezoidal Pulse Width Modulation
N. Prabakaran (Madanapalle Institute of Technology and Science, India); Zainal Salam (Universiti Teknologi Malaysia, Malaysia); Palanisamy K (VIT University, India)

SESSION 5C DC-DC Converters 1

Session Chair: **Awang Jusoh**
 Date: **31 Oct 2017, Tuesday**
 Seminar Room: **Seminar Room C**

- 1040-1100 **5C.1**
 A Two-Stage Bidirectional DC/DC Converter with SiC-MOSFET for Vehicle-to-Grid (V2G) Application
Kyo-Beum Lee and Jin-Hyuk Park (Ajou University, Korea)
- 1100-1120 **5C.2**
 Analysis of High Voltage Gain Hybrid DC-DC Converters with RBFN Based MPPT for Renewable Photovoltaic Application
Kumar. K, Ramji Tiwari and Ramesh Babu. N (VIT University, Vellore, India); Sanjeevikumar Padmanaban and Mahajan Sagar Bhaskar (University of Johannesburg, Auckland); Vigna K. Ramachandaramurthy (Universiti Tenaga Nasional)
- 1120-1140 **5C.3**
 A High Gain Modified SEPIC DC-to-DC Boost Converter for Renewable Energy Application
Pandav Kiran Maroti, Sanjeevikumar Padmanaban and Mahajan Sagar Bhaskar (University of Johannesburg); Frede Blaabjerg (Aalborg University, Denmark); Pierluigi Siano (University of Salerno); Viliam Fedák (Technical University of Kosice, Kosice); Vigna K. Ramachandaramurthy (Universiti Tenaga Nasional)
- 1140-1200 **5C.4**
 A DC-DC Buck Converter with Maximum Power Point Tracking Implementation for Photovoltaic Module Application
Abdullah Altamimi and Zafar Khan (University of Birmingham, United Kingdom)
- 1200-1220 **5C.5**
 Multistage Switched Inductor Boost Converter for Renewable Energy Application
Pandav Kiran Maroti, Sanjeevikumar Padmanaban and Mahajan Sagar Bhaskar (University of Johannesburg); Frede Blaabjerg (Aalborg University, Denmark); Vigna K. Ramachandaramurthy (Universiti Tenaga Nasional); Pierluigi Siano (University of Salerno); Viliam Fedák (Technical University of Kosice, Kosice)

SESSION 6A DC-DC Converters 2

Session Chair: **Nik Din**
 Date: **31 Oct 2017, Tuesday**
 Seminar Room: **Seminar Room A**

- 1400-1420 **6A.1**
 Modified SEPIC DC-to-DC Boost Converter with High Output-Gain Configuration for Renewable Applications
Charles Muranda, Emre Ozsoy and Sanjeevikumar Padmanaban (University of Johannesburg); Viliam Fedák (Technical University of Kosice, Kosice); Vigna K. Ramachandaramurthy (Universiti Tenaga Nasional)

1420-1440 **6A.2**
 A Novel 2L-Y DC-DC Converter Topologies for High Conversion Ratio Renewable Application
Pandav Kiran Maroti, Sanjeevikumar Padmanaban and Mahajan Sagar Bhaskar (University of Johannesburg); Frede Blaabjerg (Aalborg University, Denmark); Vigna K. Ramachandaramurthy (Universiti Tenaga Nasional); Pierluigi Siano (University of Salerno); Viliam Fedák (Technical University of Kosice, Kosice)

1440-1500 **6A.3**
 Phase-shifted Series Resonant DC-DC Converter for Wide Load Variations Using Variable Frequency Control
Mohamed Salem (UTM, Malaysia); Awang Jusoh, Nik Rumzi Nik Idris and Chee Wei Tan (Universiti Teknologi Malaysia, Malaysia)

SESSION 6B Power Electronics Converters 3

Session Chair: **Kyo Beum Lee**

Date: **31 Oct 2017, Tuesday**

Seminar Room: **Seminar Room B**

1400-1420 **6B.1**
 Comparison of Two and Four Switches Inverter Feeding Series Resonant Converter
Ibrahim Alhamrouni (Universiti Kuala Lumpur, Malaysia); Awang Jusoh and Nik Rumzi Nik Idris (Universiti Teknologi Malaysia, Malaysia); Mohamed Salem (UTM, Malaysia)

1420-1440 **6B.2**
 Active Cell Balancing Circuit with AC-Link Technique Based on Current-Fed-Push-Pull Converter
Wei-Yang Lim and Chih-Chiang Hua (National Yunlin University of Science and Technology, Taiwan)

1440-1500 **6B.3**
 DIgSILENT Modelling of a Three-phase Four-leg Power Converter Using a Triangular Carrier Wave
Haval Sardar and Dalila Mat Said (Universiti Teknologi Malaysia, Malaysia); Mohd Wazir Mustafa (University of Technology Malaysia, Malaysia); Mohammad Reza Miveh (Universiti Teknologi Malaysia); Norzanah Rosmin (University of Technology Malaysia, Malaysia); Nasarudin Ahmad (Universiti Teknologi Malaysia, Malaysia)

1500-1520 **6B.4**
 Output Voltage Control of Dual Input Single Ended Primary Inductor Converter (SEPIC) for Hybrid Photovoltaic- Piezoelectric System
H. H. Yong, N. I. Rusli and Mohammad Faridun Naim Tajuddin (Universiti Malaysia Perlis, Malaysia)