

# **2010 IEEE International Conference on Power and Energy (PECon 2010)**

**Kuala Lumpur, Malaysia  
29 November – 1 December 2010**

**Pages 1-536**



**IEEE Catalog Number: CFP10820-PRT  
ISBN: 978-1-4244-8947-3**

# TECHNICAL PROGRAM

Monday, November 29

K1 : **Keynote Address 1**  
Title : **Nuclear Energy**  
Speaker : **Prof. Dato' Dr. Noramly Muslim**  
Session Chair : **Prof. Dr. Titik Khawa Abdul Rahman**  
Time : **10:00 AM - 11:25 AM**  
Room : **Bahamas**

K2 : **Keynote Address 2**  
Title : **Planning for Smart Grid in TNB System**  
Speaker : **En. Mohd. Yusof bin Rakob**  
*General Manager (System Planning)*  
*Tenaga Nasional Berhad*  
Session Chair : **Prof. Dr. Khalid Mohd. Nor**  
Time : **11:30 AM - 12:45 PM**  
Room : **Bahamas**

**S1A: Session 1A - Computer and AI Applications in Power Engineering 1**  
**Session Chair : Assoc. Prof. Dr. Izham Zainal Abidin**  
**Room: Bahamas 1**

**2:15 *Optimal Placement of Distributed Generation Using Combination of PSO and Clonal Algorithm* 223**

Mostafa Sedighzadeh (Imam khomeini International university, Iran); Mostafa Fallahnejad (Shahid Beheshti University, Iran); Mohamad Reza Alemi (Shahid Beheshti University, Iran); Mehrad Omidvaran (Shahid Beheshti University, Iran); Davood Arzaghi-Haris (Islamic Azad University, Saveh Branch, Iran)

**2:30 *A Music Based Harmony Search (MBHS) Approach to Optimal Power Flow with Reactive Power Loss Optimization* 229**  
Mithun M Bhaskar (National Institute of Technology, Warangal, India)

**2:45 *Real Power Transfer Allocation Via Continuous Genetic Algorithm-Least Squares Support Vector Machine Technique* 234**  
Mohd Wazir Mustafa (University of Technology Malaysia, Malaysia); Mohd Herwan Sulaiman (Universiti Malaysia Perlis, Malaysia); Saiful Nizam Abd. Khalid (Universiti Teknologi Malaysia, Malaysia); Hussain Shareef (University Kebangsaan Malaysia, Maldives)

**3:00 *Thyristor Controlled Series Compensator Planning Using Evolutionary Programming for Transmission Loss Minimization for System Under Contingencies* 23:**  
Nor Rul Hasma Abdullah (Universiti Malaysia Pahang, Malaysia); Ismail Musirin (Universiti Teknologi Mara, Shah Alam, Malaysia); Muhammad Othman (Universiti Teknologi MARA, Malaysia)

**3:15 *Artificial Neural Network-based Forecast for Electricity Consumption in Malaysia* 246**

Mohd Syahmin Mohamed Othman (University of Technology MARA, Malaysia); Dalina Johari (University of Technology MARA, Malaysia); Ismail Musirin (Universiti Teknologi Mara, Shah Alam, Malaysia); Titik Khawa Abdul Rahman (University Teknologi Mara, Malaysia); Nik Fasdi Nik Ismail (Universiti Teknologi Mara (UiTM), Malaysia)

**3:30 Preprocessing of Acoustic Emission Signals From Partial Discharge in Oil-pressboard Insulation System 24;**  
Yasmin Hanum Md Thayoob (Universiti Tenaga Nasional, Malaysia); Zurita Zakaria (Universiti Tenaga Nasional, Malaysia);  
Mohd Raffi Samsudin (TNB Research, Malaysia); Prodipto S Ghosh (RUP Consultant, Canada); Min Lee Chai (Baker Atlas  
(M) Sdn Bhd, Malaysia)

**3:45 Cluster Validity Analysis for Electricity Load Profiling 257**  
Norhasnelly Anuar (Mara University of Technology, Malaysia); Zuhaina Zakaria (Universiti Teknologi MARA, Malaysia)

### **S1B: Session 1B - Power Electronics and Converters 1**

**Session Chair: Dr. Mohammad Nawawi Seroji**

**Room: Bahamas 2**

**2:15 Silent Discharge Ozonizer for Colour Removal of Treated Palm Oil Mill Effluent Using a Simple High Frequency Resonant Power Converter 25;**  
Zainal Salam (Universiti Teknologi Malaysia, Malaysia); Mochammad Facta (Universiti Teknologi Malaysia, Malaysia)

**2:30 A New Interleaved ZCS PWM Boost Converter 267**  
Mahdi Rezvanyvardom (, Iran); Ehsan Adib (Isfahan University of Technology, Iran); Hosein Farzanehfard (Isfahan University of Technology, Iran)

**2:45 DVR Based Cascaded Multilevel Z-Source Inverter 273**  
Mohamad Reza Banaei (Azarbaijan University of Tarbiat Moallem, Iran); Ali Reza Dehghanzadeh (Azarbaijan University of Tarbiat Moallem, Iran)

**3:00 A Bidirectional Zero Voltage Transition Converter with Coupled Inductors 279**  
Mohammad Reza Mohammadi (Isfahan University of Technology, Iran); Hosein Farzanehfard (Isfahan University of Technology, Iran)

**3:15 Buck-Boost Interleaved Inverter for Grid Connected Photovoltaic System 285**  
Omar Abdel-Rahim (Aswan -South Valley university, Egypt); Mohamed Orabi (APEARC, Aswan South Valley University, Egypt); Mahrous Ahmed (APEARC, Aswan South Valley University, Egypt)

**3:30 Renewable Energy Inverter Development Using dSPACE DS1104 Controller Board 28;**  
Zamre Abd. Ghani (Universiti Kebangsaan Malaysia, Malaysia); Ma Hannan (Universiti Kebangsaan Malaysia, Malaysia); Azah Mohamed (Universiti Kebangsaan Malaysia, Malaysia)

**3:45 ANFIS Based Field Oriented Control for Matrix Converter Fed Induction Motor 296**  
Chitra Venugopal (University of Kwazulu Natal, South Africa)

### **S1C: Session 1C – Renewable Energy and Nuclear Generations**

**Session Chair : Prof. Gevork B. Gharehpetian**

**Room: Copacobana**

**2:15 Analysis of Hybrid Photovoltaic and Wind Energies Connected to Unbalanced Distribution Systems 29;**  
Karar Mahmoud (South Valley University, Egypt); Mamdouh Abdel-Akher (South Valley University, Egypt)

**2:30 Coherency Determination in Grid-Connected Distributed Generation Based Hybrid System Under Islanding Scenarios 2: 7**  
Prakash Ray (Motilal Nehru National Institute of Technology, Allahabad, Uttar Pradesh, India); Somya Mohanty (MNIT Allahabad, India); Nand Kishor (Motilal Nehru National Institute of Technology Allahabad, India); Harish Chandra Dubey (Motilal Nehru National Institute of Technology, India)

**3:45 Effect of the PV/FC Hybrid Power Generation System on Total Line Loss in Distribution Network 2: :**

Yahya Kabiri Renani (Amirkabir University of Technology, Iran); Hossein Askarian Abyaneh (Amirkabir University of Technology, Iran); Seyed Hossein Hesamedin Sadeghi (Amirkabir University of Technology, Iran); Ali Talebi (Amirkabir University of Technology, Iran); Hamed Hashemi Dezaki (Amirkabir University of Technology, Iran); Hamed Nafisi (Amirkabir University of Technology (Tehran Polytechnic), Iran)

**3:00 Characteristic and Transient Analysis of Gen-4 Nuclear Power Via Reactor Kinetics and Accelerator Model 2: 7**

Syed Bahauddin Alam (Bangladesh University of Engineering & Technology (BUET), Bangladesh); Md. Nazmus Sakib (, Bangladesh); MD. Rishad Ahmed (BUET, Bangladesh); Hussain Mohammed Dipu Kabir (Bangladesh University of Engineering & Technology, Bangladesh); Khaled Redwan (BUET, Bangladesh); Md. Abdul Matin (Bangladesh University of Engineering and Technology, Bangladesh)

**3:15 EM Shielding, Dosimetry Control and Xe(135)-Sm(149) Poisoning Effect for Nuclear Waste Treatment 323**

Syed Bahauddin Alam (Bangladesh University of Engineering & Technology (BUET), Bangladesh); Hussain Mohammed Dipu Kabir (Bangladesh University of Engineering & Technology, Bangladesh); Md. Nazmus Sakib (, Bangladesh); Celia Shahnaz (BUET, Bangladesh); Shaikh Anowarul Fattah (BUET, Bangladesh)

**3:30 Nuclear Waste Transmutation by Decay Energetics, Compton Imaging, Bremsstrahlung and Nuclei Dynamics 329**

Syed Bahauddin Alam (Bangladesh University of Engineering & Technology (BUET), Bangladesh); Hussain Mohammed Dipu Kabir (Bangladesh University of Engineering & Technology, Bangladesh); MD. Rishad Ahmed (BUET, Bangladesh); A B M Rafi Sazzad (BUET, Bangladesh); Celia Shahnaz (BUET, Bangladesh); Shaikh Anowarul Fattah (BUET, Bangladesh)

**3:45 Can Gen-4 Nuclear Power and Reactor Technology Be Safe and Reliable Future Energy for Developing Countries ? 335**

Syed Bahauddin Alam (Bangladesh University of Engineering & Technology (BUET), Bangladesh); Hussain Mohammed Dipu Kabir (Bangladesh University of Engineering & Technology, Bangladesh); A B M Rafi Sazzad (BUET, Bangladesh); Khaled Redwan (BUET, Bangladesh); Ishtiaque Aziz (BUET, Bangladesh); Imranul Kabir Chowdhury (American International University-Bangladesh (AIUB), Bangladesh); Md. Abdul Matin (Bangladesh University of Engineering and Technology, Bangladesh)

**S1D: Session 1D – Power Electronic Applications 1**

**Session Chair: Prof. Dr. Zainal Salam**

**Room: Bahamas 1**

**4:15 Smart Charger for Sealed Lead Acid Batteries Based on Parallel Port PC Interfacing 33;**

Bilal Asaad Mubdir (College of Electrical & Electronics Techniques, Iraq); Rashid Ali Fayadh (College of Electrical & Electronic Techniques, Iraq)

**4:30 Harmonic Current Compensation by a Single-Phase Shunt Active Power Filter Based on Least Compensation Current Control Method 347**

Mohammad Sadegh Golsorkhi (Amirkabir University of Technology, Iran); Hadi Binandeh (Amirkabir University of Technology(Tehran Polytechnic), Iran); Javad Shokrollahi Moghani (Amirkabir University Of Technology(Tehran Polytechnic), Iran); Gevork B. Gharehpetian (Amirkabir University of Technology, Iran); Hossein Hosseinian (Amirkabir University of Technology, Iran)

**4:45 Design of a Bridgeless PFC with Line-Modulated Fixed Off-Time Current Control and Zero-Voltage Switching 34;**

Haghi (Sharif University of Technology, Iran); MohammadReza Zolghadri (Sharif University of Technology, Iran); Vahid Nasirian (Assistant, Iran); Negar Noroozi (Assistant, Iran)

**5:00 Nine-Level SHE-PWM VSC Based STATCOM for VAR Compensation 357**

Phee Jin (The University of Nottingham, Malaysia Campus, Malaysia); Mohamed Dahidah (The University of Nottingham, Malaysia Campus, Malaysia); Christian Klumpner (The University of Nottingham, UK campus, United Kingdom)

5:15 *A High Efficiency Microcontroller-Based Step-up Push-Pull DC-DC Converter for PV Inverter* 363  
Sharulnizam Mohd Mukhtar (Universiti Malaysia Perlis, Malaysia)

**S1E: Session 1E - Power Quality, Protection and Electromagnetic Compatibility 1**  
**Session Chair: Assoc. Prof. Md. Shah Majid**  
**Room: Bahamas 2**

4:15 *A New Method for Determining Multiple Harmonic Source Locations in a Power Distribution System* 368  
Masoud Farhoodnea (Universiti Kebangsaan Malaysia, Malaysia); Azah Mohamed (Universiti Kebangsaan Malaysia, Malaysia); Hussain Shareef (Universiti Kebangsaan Malaysia, Malaysia)

4:30 *Directional High-Resistance Earth Fault Detector Based on Zero-Sequence Components and Wavelet Transform* 373  
Amin Samanfar (Khoramabad Azad University, Iran); Behnam Mahamedi (Iran Grid Management Company, Iran)

4:45 *Harmonics Mitigation and Power Factor Correction with a Modern Three-phase Four-Leg Shunt Active Power Filter* 378  
Izzeldin Idris Abdalla (Universiti Teknologi PETRONAS, Malaysia); K S Rama Rao (Universiti Teknologi Petronas, Malaysia); N. Perumal (Universiti Teknologi PETRONAS, Malaysia)

5:00 *Risk Based Protective Devices Placement in Distribution Networks with DG* 384  
Seyed Ali Mohammad Javadian (Islamic Azad University-Islamshahr Branch, Iran); Mahmoud-Reza Haghifam (Tarbiat Modares University, Iran)

5:15 *New Wind Turbine Grounding System to Reduce Step & Touch Voltage* 38:  
Hossein Kazemi Karegar (Shahid Beheshti University (SBU), Iran); Masoud Arabi (Post Graduade , Iran)

**S1F: Session 1F - Power System Dynamic, Stability and Control 1**  
**Session Chair: Assoc. Prof. Dr. Zuhaina Hj Zakaria**  
**Room: Copacobana**

4:15 *Voltage Stability Analysis in Conversion of Double Three-Phase to Six-Phase Transmission Line* 394  
Reza Shariatinasab (Birjand University, Iran); Masoud Aliakbar Golkar (K. N. TOOSI University of Technology, Iran); Mohsen Akbari (K. N. Toosi University of Technology, Iran)

4:30 *Design of Output Feedback Controller for PSS and TCSC by GA to Improve the Damping of Power System Oscillations* 39:  
Abolfazl Jalilvand (Zanjan University, Iran); M. Reza Safari Tirtashi (Zanjan University, Iran)

4:45 *Coordination of HVDC-links to Increase Dynamic Stability Margins* 3: 5  
Robert Eriksson (KTH, Sweden)

5:00 *Exact and Efficient Approach in Static Assessment of Available Transfer Capability (ATC)* 3: ;  
Mostafa Eidiani (Islamic Azad University - Bojnourd Branch, Iran); Hossein Zeynal (University Technology of Malaysia (UTM), Malaysia); Alimorad Khajeh Zadeh (Center Of Electrical Energy System, UTM University, Malaysia); Khalid Mohamed Nor (Universiti Teknologi Malaysia, Malaysia)

5:15 *TCPS Controller Design Using Fuzzy Logic Controller for Power System Stability Enhancement* 3; 7  
M. Reza Safari Tirtashi (Zanjan University, Iran); Kazem Mazlumi (Zanjan University, Iran); Ahmad Rohani (Zanjan University, Iran)

**S2A: Session 2A - Power System Planning and Operation 1**

**Session Chair : Ir. Yeoh Eng Chin**

**Room: Bahamas 1**

**9:00 Analysis of Transfer Capability by Markov Chain Monte Carlo Simulation 422**

Magnus Perninge (KTH, Sweden)

**9:15 Economic Viability of Distributed Energy Resources Relative to Substation and Feeder Facilities Expansion 428**

Mudathir Akorede (Universiti Putra Malaysia, Malaysia); Hashim Hizam (UPM university, Malaysia); Ishak Aris (Universiti Putra Malaysia, Malaysia); Mohd Zainal Abidin Ab Kadir (Universiti Putra Malaysia, Malaysia); Edris Pouresmaeil (Polytechnic University of Catalonia, Spain)

**9:30 Reactive Power Allocation in Pool Based Power System Utilizing Proportional Sharing Method 433**

Mohd Herwan Sulaiman (Universiti Malaysia Perlis, Malaysia); Mohd Wazir Mustafa (University of Technology Malaysia, Malaysia); Omar Aliman (Universiti Malaysia Pahang, Malaysia)

**9:45 An Intelligent Binary Particle Swarm Optimization for Unit Commitment Problem 438**

Younes Pirhayati (Zanjan University, Iran); Kazem Mazlumi (Zanjan University, Iran)

**10:00 Bacterial Foraging-Based Solution for Optimal Capacitor Allocation in Distribution Systems 443**

Seyed Mostafa Tabatabaei (Amirkabir University of Technology, Iran); Behrooz Vahidi (Amirkabir University of Technology, Iran); Hossein Hosseinian (Amirkabir University of Technology, Iran); Seyed Mohammad Madani (Iut, Iran)

**10:15 Clonal Selection Based Artificial Immune System to Solve the Unit Commitment Problem in Restructured Electricity Sectors 449**

K Lakshmi (K S Rangasamy College of Technology, Tiruchengode, India); S Vasantharathna (, India); Chinnusamy Muniraj (Asst.Professor, India)

**S2B: Session 2B - Transmission and Distribution 1**

**Session Chair: Dr. Yasmin Hanum Md Thayoob**

**Room: Bahamas 2**

**9:00 Practical Mitigation of Voltage Sag in Distribution Networks by Combining Network Reconfiguration and DSTATCOM 454**

Nesrallah Khelef (University of Kebangsaan Malaysia, Malaysia); Azah Mohamed (Universiti Kebangsaan Malaysia, Malaysia); Hussain Shareef (University Kebangsaan Malaysia, Maldives)

**9:15 Maximum Loss Reduction by an Improved Reconfiguration Method and Capacitor Placement 45:**

Vahid Farahani (Amirkabir University of Technology, Iran); Seyed Hossein Hesamedin Sadeghi (Amirkabir University of Technology, Iran); Hossein Hosseinian (Amirkabir University of Technology, Iran); Kazem Mazlumi (Zanjan University, Iran); Hossein Askarian Abyaneh (Amirkabir University of Technology, Iran)

**9:30 Analysis of Wave Propagation in Time Domain Reflectometry Circuit Simulation Model 466**

Yasmin Hanum Md Thayoob (Universiti Tenaga Nasional, Malaysia); Suhaila Sulaiman (Universiti Tenaga Nasional, Malaysia); Azrul Mohd Ariffin (UNITEN, Malaysia)

**9:45 Steady-State Behavior of Distributed Energy Resources in Unbalance Radial Active Distribution Networks 472**

Mohammad Hossein Ashourian (University Teknologi Malaysia (UTM), Malaysia); Abdullah Asuhaimi Mohd Zin (Universiti Teknologi Malaysia, Malaysia); Ahmad Safawi b. Mokhtar (University Teknologi Malaysia (UTM), Malaysia); Zariah bt Muda (University Teknologi Malaysia (UTM), Malaysia)

**10:00 Impact of Static Load on Voltage Stability of an Unbalanced Distribution System 478**

Sugunesan Gunalan (Universiti Tenaga Nasional, Malaysia); Agileswari K. Ramasamy (Universiti Tenaga Nasional, Malaysia); Renuga Verayiah (Universiti Tenaga Nasional, Malaysia)

**10:15 New Islanding Detection Technique for DG Using Discrete Wavelet Transform 484**

Reza Shariatinasab (Birjand University, Iran); Mohsen Akbari (K. N. Toosi University of Technology, Iran)

**S2C: Session 2C – Electrical Machines Design**  
**Session Chair: Dr. Muhammad Murtadha Othman**  
**Room: Copacobana**

**9:00 New Structure for High Speed and Variable Speed Wind Turbine Based Switched Reluctance Generator 48:**

Hossein Kazemi Karegar (Shahid Beheshti University (SBU), Iran); Masoome Yazdi (Post Graduate , Iran); Alireza Siadatan (Islamic Azad University, Iran)

**9:15 FEA-Based Design and Parameter Optimization Study of 6-Slot 5-Pole PMFSM with Field Excitation for Hybrid Electric Vehicle 496**

Erwan Sulaiman (University of Tun Hussein Onn Malaysia, Malaysia)

**9:30 Analysis of Energy Savings for Rewinding and Replacement of Industrial Motor 4: 2**

Md. Hasanuzzaman (University of Malaya, Malaysia)

**9:45 Static Eccentricity Fault Diagnosis in Switched Reluctance Motor 4: 8**

Hossein Torkaman (Shahid Beheshti University, Iran); Ebrahim Afjei (Shahid Beheshti University, Iran); Ali Nadian (Shahid Beheshti University, Iran)

**10:00 A New Double Layer Per Phase Configuration for Switched Reluctance Motor 4: 2**

Ebrahim Afjei (Shahid Beheshti University, Iran); Hossein Torkaman (Shahid Beheshti University, Iran); Babak Mazloomnezhad (Shahid Beheshti University, Iran)

**10:15 Linear Generator Models in Simulink Block 4: 6**

Shamsul Zulkifli (University of Liverpool, United Kingdom); Md Zarafi Ahmad (, Malaysia)

**S2D: Computer and AI Applications in Power Engineering 2**  
**Session Chair : Ir. M Zain Abdullah**  
**Room: Bahamas 1**

**10:45 Intelligent Optimization Techniques for Optimal Power Flow Using Interline Power Flow Controller 522**

K S Rama Rao (Universiti Teknologi Petronas, Malaysia); Khalid Haroun Mohamed Abdelgadir (Universiti Teknologi PETRONAS, Malaysia)

**11:00 Modeling and Evaluation of the Power System Protection Using Petri Nets 528**

Ahmad Ashouri (Zanjan University, Iran); Abolfazl Jalilvand (Zanjan University, Iran); Reza Noroozian (Zanjan University, Iran); Amir Bagheri (Zanjan University, Iran)

**11:15 Condition Monitoring of Electrical Supply Voltage Quality to Electrical Machines Using RBF Neural Network 534**

Harapajan Singh (Universiti Teknologi MARA, Malaysia); Manjeevan Seera (Universiti Sains Malaysia, Malaysia); Ahmad Puad Ismail (Universiti Teknologi MARA, Malaysia)

**11:30 Data Transfer Rate, Central Processing Unit Usage and Read Access Memory Usage in Networked Control System Via Industrial Ethernet 53:**

Handy Ali Munir (Universiti Teknologi PETRONAS, Malaysia); Nordin B Saad (Universiti Teknologi Petronas, Malaysia); Syed Alwee Aljunid (Universiti Malaysia Perlis, Malaysia); Ahmad Mujahid Ahmad Zaidi (National Defence University of Malaysia, Malaysia); Mohd Zuki Yusoff (Universiti Teknologi Petronas, Malaysia); Asmarashid Ponniran (Universiti Tun Hussein Onn Malaysia, Malaysia)

**11:45 Distributed Interactive Power System Simulator Using Web Technology 546**

Mamdouh Abdel-Akher (South Valley University, Egypt); Mohamed K. El-Nemr (Tanta University, Egypt); Wael Abdel-Galil (EtaSoft, Egypt)

**12:00 Field Weakening in PMSM Model Based Predictive Control 552**

Pavel Vaclavek (Brno University of Technology, Czech Republic); Petr Blaha (Brno University of Technology, Czech Republic)

**12:15 Detection of Transformer Winding Axial Displacement Using Scattering Parameter and ANN 558**

Maryam Akhavan Hejazi (Amirkabir university of Technology, Iran); Hasan Ali Alehoseini (Amirkabir University of Technology, Iran); Gevork B. Gharehpetian (Amirkabir University of Technology, Iran)

**12:30 Performance Comparison of MLP and RBF Neural Networks for Fault Location in Distribution Networks with DGs 563**

Hadi Zayandehroodi (University Kebangsaan Malaysia (UKM), Malaysia); Azah Mohamed (Universiti Kebangsaan Malaysia, Malaysia); Hussain Shareef (Universiti Kebangsaan Malaysia, Malaysia); Marjan Mohammadjafari (University of malaya, Malaysia)

**S2E: High Voltage Engineering**

**Session Chair: Assoc. Prof. Dr. Mohd Zainal Abidin Ab Kadir**

**Room: Bahamas 2**

**10:45 Condition Monitoring of Outdoor Polymeric Insulators Using Wavelets and ANFIS 568**

Chinnusamy Muniraj (Asst.Professor, India); S Chandrasekar (, India)

**11:00 Antennas Positioning for On-line Monitoring of Transformer Winding Radial Deformation Using UWB Sensors 574**

Javad Ebrahimi (Amirkabir University of Technology, Iran); Gevork B. Gharehpetian (Amirkabir University of Technology, Iran); Hamidreza AminDavar (Amirkabir University of Technology (AUT), Iran); Maryam Akhavan Hejazi (Amirkabir university of Technology, Iran)

**11:15 Time-to-Thunder Method of Lightning Distance Determination 579**

Wan Ismail Ibrahim (Universiti Malaysia Pahang, Malaysia); Zulkurnain Abdul Malek (UTM, Malaysia)

**11:30 Limitation of Transmission Line Switching Overvoltages 585**

Heresh Seyedi (University of Tabriz, Iran); Smko Golabi (University of Tabriz, Iran); Zaher Abam (University of Tabriz, Iran)

**11:45 Detection of Transformer Winding Radial Deformations by Using UWB Pulses and DWT 58;**

Javad Ebrahimi (Amirkabir University of Technology, Iran); Gevork B. Gharehpetian (Amirkabir University of Technology, Iran); Hamidreza AminDavar (Amirkabir University of Technology (AUT), Iran); Maryam Akhavan Hejazi (Amirkabir university of Technology, Iran)

**12:00 Transformer Winding Radial Deformation Detection Using Scattering Parameters 595**

Hasan Ali Alehoseini (Amirkabir University of Technology, Iran); Maryam Akhavan Hejazi (Amirkabir university of Technology, Iran); Gevork B. Gharehpetian (Amirkabir University of Technology, Iran)



**12:15 Study of Impulse Voltage Distribution in Transformer Windings 59;**

Hendri Masdi (UPM, Malaysia); Norman Mariun (Universiti Putra Malaysia, Malaysia); Azah Mohamed (Universiti Kebangsaan Malaysia, Malaysia); Noor Izzri Abdul Wahab (Universiti Putra Malaysia, Malaysia)

**12:30 Considering on Charge Density along Return Stroke Lightning Channel 5: 6**

Mehdi Izadi (University putra malaysia, Malaysia); Mohd Zainal Abidin Ab Kadir (Universiti Putra malaysia, Malaysia)

## **S2F: Power System Dynamic, Stability and Control 2**

**Session Chair: Prof. Dr. K. Rama Rao**

**Room: Copacobana**

**10:45 Voltage Stability Calculations in Power Transmission Lines: Indications and Allocations 5; 2**

Fahad A Althowibi (Universiti Teknologi Malaysia, UTM, Malaysia); Mohd Wazir Mustafa (University of Technology Malaysia, Malaysia)

**11:00 Line Voltage Stability Calculations in Power Systems 5; 8**

Fahad A Althowibi (Universiti Teknologi Malaysia, UTM, Malaysia); Mohd Wazir Mustafa (University of Technology Malaysia, Malaysia)

**11:15 An Analysis of Transient Stability Using Center-of-Inertia: Angle and Speed 624**

Halimatun Hashim (Universiti Tenaga Nasional, Malaysia); Ridzuwan Zulkepali (Universiti Tenaga Nasional, Malaysia); Ya'akob R. Omar (Universiti Tenaga Nasional, Malaysia); Noraisma Ismail (Universiti Tenaga Nasional, Malaysia); Izham Z. Abidin (Universiti Tenaga Nasional, Malaysia); Sallehudin Yusof (Advanced Power Solution, Malaysia)

**11:30 On-line Voltage Collapse Indicator for Power Systems 62:**

Fahad A Althowibi (Universiti Teknologi Malaysia, UTM, Malaysia); Mohd Wazir Mustafa (University of Technology Malaysia, Malaysia)

**11:45 Under Frequency Load Shedding (UFLS): Principles And Implementation 636**

Ya'akob R. Omar (Universiti Tenaga Nasional, Malaysia); Izham Z. Abidin (Universiti Tenaga Nasional, Malaysia); Halimatun Hashim (Universiti Tenaga Nasional, Malaysia)

**12:00 Influence of Distributed Generations and Renewable Energy Resources Power Plant on Power System Transient Stability 642**

Mohd Zamri Che Wanik (Institute of Electrical Power System, University of Duisburg-Essen, Germany); Istvan Erlich (University of Duisburg-Essen, Germany); Azah Mohamed (Universiti Kebangsaan Malaysia, Malaysia); Azuki Abdul Salam (University Kebangsaan Malaysia, Malaysia)

**12:15 Transient Stability Emergency Control of Power Systems Employing UFLS Combined with Generator Tripping Method 648**

Noor Izzri Abdul Wahab (Universiti Putra Malaysia, Malaysia); Azah Mohamed (Universiti Kebangsaan Malaysia, Malaysia)

**12:30 On Comparing the Performance of Voltage Source Converters Based D-STATCOM for Voltage Sag Mitigation 654**

Kanagaraj Pillay (Nathan Electrical, Malaysia); Mohamed Dahidah (The University of Nottingham, Malaysia Campus, Malaysia); Norman Mariun (Universiti Putra Malaysia, Malaysia)

**S2G: Electrical Drives & Traction**  
**Session Chair: Prof. Ir. Dr. Norman Mariun**  
**Room: Bahamas 1**

**2:00 A Novel Sensorless Method for Rotor Position Detection in Bifilar SRM Drive 65:**

Alireza Kazemi (Shahid Beheshti University, Tehran, Iran); Majid Asgar (& Computer Engineering Shahid Beheshti University, Iran); Ebrahim Afjei (Shahid Beheshti University, Iran); Alireza Siadatan (Islamic Azad University, Iran)

**2:15 On-line Parameter Estimation of an Induction Machine Using a Recursive Least-Squares Algorithm with Multiple Time-Varying Forgetting Factors 666**

Duy Huynh (Heriot-Watt University, United Kingdom); Matthew Dunnigan (Heriot-Watt University, United Kingdom); Stephen Finney (University of Strathclyde, United Kingdom)

**2:30 Energy Efficient Control of an Induction Machine Using a Chaos Particle Swarm Optimization Algorithm 672**

Duy Huynh (Heriot-Watt University, United Kingdom); Matthew Dunnigan (Heriot-Watt University, United Kingdom); Stephen Finney (University of Strathclyde, United Kingdom)

**2:45 A Sector Advanced Technique to Improve Dynamic Response of a Direct Torque Controlled Induction Motor 678**

Pvrl Narasimham (Gudlavalleru Engineering College, JNTU Kakinada, India); Avrs Sarma (, India); E Vargil Kumar (Gudlavalleru Engineering College, Gudlavalleru, India)

**3:00 Implementation of Fuzzy Logic Controller for Permanent Magnet Brushless DC Motor Drives 684**

Tan Chee Siong (Universiti Malaysia Perlis, Malaysia); Baharuddin Ismail (Universiti Malaysia Perlis, Malaysia); Siti Fatimah Siraj (Universiti Malaysia Perlis, Malaysia); Mohammad Faridun Naim Tajuddin (Universiti Malaysia Perlis, Malaysia); Mohd Fayzul Mohammed (Universiti Malaysia Perlis, Malaysia)

**3:15 High Performance Induction Motor Drive Using Fuzzy Self-Tuning Hybrid Fuzzy Controller 68:**

Ali Saghafinia (University of Malaya, Malaysia); Hew Wooi Ping (University Malaya, Malaysia)

**3:30 Improved Performance of PMSM Speed Responses Using a Hybrid Fuzzy/ PI Controller 696**

Kein Huat Chua (Universiti Tunku Abdul Rahman, Malaysia); Yun Seng Lim (Universiti Tunku Abdul Rahman, Malaysia); Stella Morris (Universiti Tunku Abdul Rahman, Malaysia); Jianhui Wong (Universiti Tunku Abdul Rahman, Malaysia)

**S2H: Renewable Energy and Energy Efficiency 1**

**Session Chair: Dr. Mamdouh Abdel-Akher**

**Room: Bahamas 2**

**2:00 Design of a Predictive Control Strategy for Integration of Stand-Alone Wind/Diesel System 6: 2**

Behzad Sedaghat (Zanjan University, Iran); Abolfazl Jalilvand (Zanjan University, Iran); Reza Noroozian (Zanjan University, Iran)

**2:15 Investigating of Wind Turbines Affects on Recloser Operation in Distribution Networks 6: 7**

Hossein Kazemi Karegar (Shahid Beheshti University (SBU), Iran); Sadegh Saberi (Post graduated , Iran)

**2:30 Optimal Size of Distributed Generation to Minimize Distribution Loss Using Dynamic Programming 6: ;**

Sumit Paudyal (University of Waterloo, Canada); Ehab F El-Saadany (University of Waterloo, Canada); Lana R El Chaar (Petroleum Institute, UAE); Lisa A Lamont (Petroleum Institute, UAE)

**2:45 Simulation of PV Array Output Power for Modified PV Cell Model 6; 7**

Nand Kishor (Motilal Nehru National Institute of Technology Allahabad, India); Somya Mohanty (MNIT Allahabad, India); Marcelo Villalva (University of Campinas, Brazil); E Ruppert (University of Campinas, Brazil)

**3:00 Proteus Based Simulation of a Charge Controller 723**

Ahmad Shukri Fazil Rahman (UniMAP, Malaysia); Abdul Rahim Abdul Razak (UniMAP, Malaysia)

**3:15 Grid-Connected Photovoltaic Models for Three-Phase Load Flow Analysis 727**

Syafii (Universiti Teknologi Malaysia, Malaysia)

**3:30 Improving Power Loss Reduction Calculations for Distributed Generation Planning 732**

Harout Manougian (University of Waterloo, Canada); Ehab F El-Saadany (University of Waterloo, Canada); Lisa A Lamont (Petroleum Institute, UAE); Lana R El Chaar (Petroleum Institute, UAE)

**S2I: Power Electronic Applications 2**

**Session Chair: Dr. Yun Seng Lim**

**Room: Copacobana**

**2:00 Proton Exchange Membrane Fuel Cell Control Using a State Feedback Controller Based on LQR 738**

Davood Arzaghi-Haris (Islamic Azad University, Saveh Branch, Iran); Mostafa Sedighzadeh (Imam khomeini International university, Iran); Maryam Zolfaghari-Nejad (Imam khomeini International university, Iran); Zeinab Tirkan (Imam khomeini International university, Iran)

**2:15 Material Based Characterization of Aqueous Metal Oxide Based Supercapacitors 743**

Parashuram Karandikar (Pune University, India); Dhananjay Talange (Pune University, India)

**2:30 Single-Phase Grid-Tie Inverter Control Using DQ Transform for Active and Reactive Load Power Compensation 747**

Brent Crowhurst (University of Waterloo, Canada); Ehab F El-Saadany (University of Waterloo, Canada); Lana R El Chaar (Petroleum Institute, UAE); Lisa A Lamont (Petroleum Institute, UAE)

**2:45 Steady State Investigation of Self Excited 3 Phase Induction Generator with Novel Leading VAR Controller and Mitigation of Harmonics Using Active Power Filter 753**

E Vargil Kumar (Gudlavalleru Engineering College, Gudlavalleru, India); Pvr1 Narasimham (Gudlavalleru Engineering College, JNTU Kakinada, India); Avrs Sarma (, India)

**3:00 A Single Stage SEPIC PFC Converter for LED Street Lighting Applications 759**

Mokhtar Ali (APEARC, Aswan South Valley University, Egypt); Mohamed Orabi (APEARC, Aswan South Valley University, Egypt); Mahrous Ahmed (APEARC, Aswan South Valley University, Egypt); Abdelali El-Aroudi (Rovira i Virgili, Spain)

**3:15 New Resonance Type Fault Current Limiter 765**

Mehrdad Tarafdar Hagh (University of Tabriz, Iran); Mehdi Jafari (University of Tabriz, Iran); Seyed Behzad Naderi (University of Tabriz, Iran)

**3:30 Simple Sensorless Control Technique of Permanent Magnet Synchronous Generator Wind Turbine 76:**

Mahmoud Hussein (APEARC, Aswan South Valley University, Egypt); Mohamed Orabi (APEARC, Aswan South Valley University, Egypt); Mahrous Ahmed (APEARC, Aswan South Valley University, Egypt); Mahmoud A. Sayed (South Valley University, Egypt)

**S2J: Power Quality, Protection and Electromagnetic Compatibility 2**

**Session Chair: Ir. N. Perumal**

**Room: Bahamas 1**

**4:00 A New Modeling Method for Reliability Evaluation of Thermal Power Plants 776**

Farshad Khosravi (UTM, Malaysia); Naziha Ahmad Azli (Universiti Teknologi Malaysia, Malaysia); Ebrahim Babaei (University of Tabriz, Iran)

**4:15 Harmonic and Neutral to Ground Voltage Reduction Using Isolation Transformer 782**

Mohd Affandi Shafie (University Teknologi MARA, Malaysia)

**4:30 Enhancement of Power System Quality Using Distributed Generation 788**

Hitesh Mathur (BITS, Pilani, India)

**4:45 New High Impedance Fault Detection 794**

Alireza Siadatan (Islamic Azad University, Iran); Hossein Kazemi Karegar (Shahid Beheshti University (SBU), Iran); Vahid Najmi (Sharif University of Technology, Iran)

**5:00 Optimized Protective Devices Allocation in Electric Power Distribution Systems Based on the Current Conditions of the Devices 798**

Hamed Hashemi Dezaki (Amirkabir University of Technology, Iran); Hossein Askarian Abyaneh (Amirkabir University of Technology, Iran); Yahya Kabiri Renani (Amirkabir University of Technology, Iran); Hamed Nafisi (Amirkabir University of Technology (Tehran Polytechnic), Iran); Kazem Mazlumi (Zanjan University, Iran); Hamidreza Akbarfakhrabadi (Amirkabir University of Technology, Iran)

### **S2K: Power System Dynamic, Stability and Control 3**

**Session Chair: Assoc. Prof. Dr. Musse Mohamoud Ahmed**

**Room: Bahamas 2**

**4:00 Dynamic Modeling of Interline Power Flow Controller for Small Signal Stability 7: 4**

Aivelu Manga Parimi (Universiti Teknologi PETRONAS, Malaysia); Nirod C Sahoo (, Malaysia); Irraivan Elamvazuthi (Universiti Teknologi Petronas, Malaysia); Nordin B Saad (Universiti Teknologi Petronas, Malaysia)

**4:15 Optimization of Micro-Turbine Generation Control System Using Genetic Algorithm 7: :**

Seyed Morteza Alizadeh (Islamic Azad University, Saveh Branch, Iran); Mostafa Sedighzadeh (Imam khomeini International university, Iran); Davood Arzaghi-Haris (Islamic Azad University, Saveh Branch, Iran)

**4:30 Dynamic Neural Network for AGC in Restructure Power System 7: 5**

Kamel Sabahi (Islamic Azad University- Mamaghan branch, Iran); Easa Narimani (Islamic Azad University- Mamaghan branch, Iran); Ahmad Faramarzi (Islamic Azad University- ardabil branch, Iran)

**4:45 Sizing and Locating Distributed Generations for Losses Minimization and Voltage Stability Improvement 7: ;**

Karar Mahmoud (South Valley University, Egypt); Mamdouh Abdel-Akher (South Valley University, Egypt); Abdel Fatah Ali (South Valley University, Egypt)

**5:00 Compensating Capacitor Design for Improving Angle Stability of DGs in a Micro-grid Using Trajectory Sensitivities Approach 826**

Ali Bidram (Isfahan University of Technology, Iran); Mohamad Esmail Hamedani Golshan (Isfahan university of Technology, Iran); Ahmadreza Tabesh (Isfahan University of Technology, Iran)

### **S2L: Renewable Energy and Energy Efficiency 2**

**Session Chair: Dr. Md. Pauzi Abdullah**

**Room: Copacabana**

**4:00 Optimum Design of High Efficiency Power Conditioning Wind Energy System 832**

Mohamed Hilmy (APEARC, Aswan South Valley University, Egypt); Mohamed Orabi (APEARC, Aswan South Valley University, Egypt); Mahrous Ahmed (APEARC, Aswan South Valley University, Egypt); Mahmoud A. Sayed (South Valley University, Egypt); Mohamed K. El-Nemr (Tanta University, Egypt)

**4:15 New Method for Reconnection of Islanded Wind Turbines to Grid** 838

Hossein Kazemi Karegar (Shahid Beheshti University (SBU), Iran); Alireza Nateghi (, Iran)

**4:30 Development an Efficient Photovoltaic (PV) Configuration for Low Power Applications** 843

Omar Abdel-Rahim (Aswan -South Valley university, Egypt); Mohamed Orabi (APEARC, Aswan South Valley University, Egypt); Mahrous Ahmed (APEARC, Aswan South Valley University, Egypt)

**4:45 Evaluation of the Solar Hybrid System for Rural Schools in Sabah, Malaysia** 849

Abdul Muhaimin Mahmud (Public Works , Malaysia)

**5:00 Wind Power Integrated with Compressed Air Energy Storage** 855

Ali Daneshi (Darya Pala Engineering Co., Iran); Nima Sadromtazi (Royal institute of Technology-KTH, Sweden); Hossein Daneshi (LCG Consulting.Co, USA); Mojtaba Khederzadeh (PWUT, Iran)

### **S3A: Power Quality, Protection and Electromagnetic Compatibility 3**

**Session Chair: Assoc. Prof. Dr. Ismail Musirin**

**Room: Bahamas 1**

**9:00 Hybrid SFS and Q-f Islanding Detection Method for Inverter-Based DG** 85;

Hesan Vahedi, Reza Noroozian (Zanjan University, Iran); Abolfazl Jalilvand (Zanjan University, Iran); Gevork B. Gharehpetian (Amirkabir University of Technology, Iran)

**9:15 Power Quality Problem Classification Based on Wavelet Transform and a Rule-Based Method** 866

Perumal Nallagownden (Universiti Teknologi Petronas, Malaysia); Heng Keow Chuah (University Technology Petronas, Malaysia); K. Rama Rao (Universiti Teknologi PETRONAS, Malaysia)

**9:30 Testing of Contactors Under Voltage Sag and Non-sinusoidal Voltage Conditions** 872

Surya Hardi (University Malaysia Perlis, Malaysia)

**9:45 Investigation on Impact of Current Harmonic Contents on the Distribution Transformer Losses and Remaining Life** 878

Mohammad Yazdani-Asrami (Babol University of Technology, Iran); Mohammad Mirzaie (Babol University of Technology, Iran); Amir Shayegani Akmal (University of Tehran, Iran)

**10:00 Impact of Medium Power Inverter-Based Residential Harmonic Loads and PFCs on Low Voltage Lines** 884

Mau Teng Au (Universiti Tenaga Nasional, Malaysia); John Navamany (University Tenaga Nasional, Malaysia); Eng Chin Yeoh (Universiti Tenaga Nasional, Malaysia)

**10:15 Effect of Impedances Line Length to Voltage Sag Propagation** 889

Rijalul Fahmi Mustapa (Universiti Teknologi MARA, Malaysia); Noraliza Hamzah (Universiti Teknologi MARA, Malaysia); Zuhaina Zakaria (Universiti Teknologi MARA, Malaysia); Md Salleh Serwan (APS, Malaysia)

### **S3B: Power Electronics & Converters 3**

**Session Chair : Ir. Harapajan Singh**

**Room: Bahamas 2**

**9:00 Robust Current Controller for PM Synchronous Motor** 895

Petr Blaha (Brno University of Technology, Czech Republic); Pavel Vaclavek (Brno University of Technology, Czech Republic)

**9:15 Application of Non-superconducting Fault Current Limiter to Improve Transient Stability 89;**  
Mehrddad Tarafdar Hagh (University of Tabriz, Iran); Mehdi Jafari (University of Tabriz, Iran); Seyed Behzad Naderi (University of Tabriz, Iran)

**9:30 Indirect Rotor Position Detection in a Field Assisted Switched Reluctance Motor by Utilizing Aligned Resonant Frequency 8: 6**  
Ali Nadian (Shahid Beheshti University, Iran); Ebrahim Afjei (Shahid Beheshti University, Iran); Hossein Torkaman (Shahid Beheshti University, Iran)

**9:45 A Novel Low Cost Bipolar-Starting and Unipolar-Running Converter for Extended Torque -Speed Characteristics of Spindle Motor 8: ;**  
Pvri Narasimham (Gudlavalleru Engineering College, JNTU Kakinada, India); Avrs Sarma (, India); E Vargil Kumar (Gudlavalleru Engineering College, Gudlavalleru, India)

**10:00 Fuzzy Logic Controller on DC/DC Boost Converter 8; 6**  
Nik Fasdi Nik Ismail (Universiti Teknologi Mara (UiTM), Malaysia); Dalina Johari (University of Technology MARA, Malaysia); Rahimi Baharom (Universiti Teknologi MARA, Malaysia); Ismail Musirin (Universiti Teknologi Mara, Shah Alam, Malaysia)

**10:15 A Novel Power Line Communication Controller Designed for Point-of-load Dc-Dc Converters 922**  
Zhuochao Sun (Nanyang Technological University, Singapore); Liter Siek (Nanyang Technological University, Singapore)

**S3C: Transmission and Distribution 2**  
**Session Chair: Dr. Muhammad Murtadha Othman**  
**Room: Copacobana**

**9:00 Control Action Based on Steady-State Security Assessment Using an Artificial Neural Network 927**  
Ahmed AL-Masri (University Putra Malaysia, Malaysia); Mohd Zainal Abidin Ab Kadir (Universiti Putra Malaysia, Malaysia); Hashim Hizam (UPM university, Malaysia); Norman Mariun (Universiti Putra Malaysia, Malaysia); Sallehudin Yusof (Advance Power Solution Sdn Bhd, Malaysia)

**9:15 A Review on Optimal Placement Methods of Distribution Generation Sources 933**  
Kaveh Abookazemi (University of Technology Malaysia (UTM), Malaysia); Mohammad Yusri Hassan (University of Technology Malaysia(UTM), Malaysia); Md Shah Majid (University of Technology Malaysia(UTM), Malaysia)

**9:30 Three Phase Grid Connected Anti-Islanding Controller Based on Distributed Generation Interconnection 938**  
Maher G.M. Abdolrasol (University of Malaya, Malaysia)

**9:45 The Benefits of Looping a Radial Distribution System with a Power Flow Controller 944**  
Mehdi Saradarzadeh (University of Tehran, Iran); Shahrokh Farhangi (University of Tehran, Iran); Jean-Luc Schanen (Grenoble Electrical Engineering Laboratory, France); Pierre-Olivier Jeannin (Grenoble Université, France); David Frey (Grenoble University, France)

**10:00 Transmission Loss Allocation in Power Systems Using Artificial Neural Network 94:**  
Mahmoud-Reza Haghifam (Tarbiat Modares University, Iran)

**10:15 Electroluminescence as Pre-breakdown Phenomenon in Polymers Used for Underground Cable Insulation 956**  
Nurhazwani Mat Tajudin (Universiti Tenaga Nasional, Malaysia); Azrul Mohd Ariffin (UNITEN, Malaysia)

**S3D: Power System Planning and Operation 3**  
**Session Chair: Prof. Dr. Titik Khawa Abdul Rahman**  
**Room: Bahamas 1**

**10:45 *Transmission Pricing in Iran Electricity Market* 95;**

Mostafa Modiri Delshad (Faculty Member, Iran); Iman Rahmati (Ministry of Energy, Iran); Mohamad Sadegh Ghazizadeh (Power and Water University of Technology (PWUT), Iran)

**11:00 *Generation Reliability Assessment in Power Markets Using Game Theory and MCS* 966**

Hossein Haroonabadi (Islamic Azad University, Iran)

**11:15 *Uninterruptible Power Supply (UPS) System Configurations: Reliability Comparison* 972**

Mohd Rahmat (University of Kuala Lumpur, Malaysia)

**11:30 *Transmission Losses Allocation in Deregulation Electricity Market* 978**

Anis Niza Ramani (Universiti Teknikal Malaysia Melaka, Malaysia); Kyairul Azmi Baharin (Universiti Teknikal Malaysia Melaka, Malaysia)

**11:45 *Market Based Criteria for Transmission Expansion Planning* 983**

Gholamreza Kamyab (Islamic Azad University, Iran); Mahmud Fotuhi-Firuzabad (Sharif University of Technology, Iran); Masoud Rashidi-Nejad (Shahid Bahonar univeristy, Kerman, Iran)

**12:00 *Sustainable Development Design of Electrical Systems "A Case Study of Asiaflex Products"* 989**

Perumal Nallagownden (Universiti Teknologi Petronas, Malaysia)

**12:15 *Impacts of Grid-Connected PV System on the Steady-State Operation of a Malaysian Grid* 995**

Sam Koohi Kamali (University of Malaya, Malaysia)

**S3E: Power Electronics & Converters 4**  
**Session Chair: Dr. Mohammad Nawawi Seroji**  
**Room: Bahamas 2**

**10:45 *Extending the Operating Range of Cascaded H-Bridge Based Multilevel Rectifier Under Unbalanced Load Conditions* 99;**

Mohammad Ali Rezaei (University of Tehran, Iran); Shahrokh Farhangi (University of Tehran, Iran); Hossein Iman-Eini (University of Tehran, Iran)

**11:00 *Dual Motor Drives for PMSM Using Average Phase Current Technique* 9: 7**

Jurifa Mat Lazi (Universiti Teknikal Malaysia Melaka, Malaysia); Zulkifilie Ibrahim (Co-supervisor, Malaysia); Raihana Mustafa (Universiti Teknikal Malaysia Melaka, Malaysia); Md Hairul Nizam Talib (, Malaysia)

**11:15 *An Isolated Bridgeless AC-DC Converter with High Power Factor* 9; 2**

Mohd Rodhi Sahid (Universiti Teknologi Malaysia, Malaysia); Abdul Halim Yatim (Universiti Teknologi Malaysia, Malaysia)

**11:30 *Implementation of Single Input Fuzzy Logic Controller for Boost DC to DC Power Converter* 9; 8**

Fazel Taeed (Universiti Teknologi Malaysia, Malaysia); Zainal Salam (Universiti Teknologi Malaysia, Malaysia); Shahrin Md. Ayob (Universiti Teknologi Malaysia, Malaysia)

**11:45 *Analysis and Design of a High Efficiency Bidirectional DC-DC Converter for Battery and Ultracapacitor Applications* : 24**

Amin Mirzaei (Universiti Teknologi Malaysia, Malaysia); Awang Jusoh (Universiti Teknologi Malaysia, Malaysia); Zainal Salam (Universiti Teknologi Malaysia, Malaysia); Ehsan Adib (Isfahan University of Technology, Iran); Hosein Farzanehfard (Isfahan University of Technology, Iran)

**12:00 Steady State Analysis of LCLC Resonant Converter with Capacitive Output Filter : 28**

Navid Shafiei (Islamic Azad university, Najafabad branch, Iran); Hosein Farzanehfard (Isfahan University of Technology, Iran)

**12:15 An Isolated Three-Phase Soft-Switched Buck Rectifier : 34**

Negar Noroozi (Assistant, Iran); MohammadReza Zolghadri (Sharif University of Technology, Iran); Haghi (Sharif University of Technology, Iran)

**12:30 A Switched Inductor Multilevel Boost Converter : 3:**

Mostafa Mousa (APEARC, Aswan South Valley University, Egypt); Mohamed Orabi (APEARC, Aswan South Valley University, Egypt); Mahrous Ahmed (APEARC, Aswan South Valley University, Egypt)

**S3F: Electrical Machines and Drives**  
**Session Chair: Assoc. Prof. Dr. Izham Zainal Abidin**  
**Room: Copacobana**

**10:45 Evaluation of Fourier and Wavelet Analysis for Efficient Recognition of Broken Rotor Bar in Squirrel- cage Induction Machine : 45**

Mohammad Rezazadeh Mehrjou (University Putra Malaysia, Malaysia); Norman Mariun (Universiti Putra Malaysia, Malaysia)

**11:00 A New Rotor Position Detection Method Using Bifilar Windings and Resonant Circuit in SRM Drive : 49**

Alireza Kazemi (Shahid Beheshti University, Tehran, Iran); Majid Asgar (& Computer Engineering Shahid Beheshti University, Iran); Ebrahim Afjei (Shahid Beheshti University, Iran); Alireza Siadatan (Islamic Azad University, Iran)

**11:15 Optimizing the Magnetic Dimensions for Maximum Thrust in High Density Transverse Flux Linear Motor : 54**

Misron Norhisam (Universiti Putra Malaysia, Malaysia); Mohammad Reza Zare (Universiti Putra Malaysia, Malaysia); Norman Mariun (Universiti Putra Malaysia, Malaysia); Ishak Aris (Universiti Putra Malaysia, Malaysia); Hiroyuki Wakiwaka (Shinshu University, Japan); M. NIrei (Nagano National College of Technology, Japan)

**11:30 Fuzzy Logic Based DTC for Speed Control of Matrix Converter Fed Induction Motor : 58**

Chitra Venugopal (University of Kwazulu Natal, South Africa)

**11:45 Improved Speed Operation of Sensorless BLDC Motor Drives Using IIR Digital Filter : 64**

Maher Mohammed (University Sains Malaysia, Malaysia); Dahaman Ishak (Universiti Sains Malaysia, Malaysia); Khaleel Hammadi (Universiti Sains Malaysia, Malaysia)

**12:00 Dynamic Performance of Series-Connected Wound Rotor Induction Motor : 6:**

Essam Eddin Rashad (Tanta University, Egypt)

**12:15 Stability of Variable Speed Series-Connected Wound Rotor Induction Motor in Super-Synchronous Mode : 76**

Essam Eddin Rashad (Tanta University, Egypt)

**12:30 Intelligent Adaptive Control of Doubly Fed Induction Generator : 7;**

Abolfazl Jalilvand (Zanjan University, Iran); Majid Bigonah Mikal (Zanjan University, Iran); Mohammad Naseh Hassanzadeh (Islamic Azad University, Iran)



**S3G: Power System Planning and Operation 4**  
**Session Chair: Assoc. Prof. Dr. Musse Mohamoud Ahmed**  
**Room: Bahamas 1**

**2:00 Multi-Thread Security Constraint Economic Dispatch with Exact Loss Formulation : 85**

Alimorad Khajeh Zadeh (Center Of Electrical Energy System, UTM University, Malaysia); Khalid Mohamed Nor (Universiti Teknologi Malaysia, Malaysia); Hossein Zeynal (University Technology of Malaysia (UTM), Malaysia)

**2:15 A Proposed Genetic Algorithm to Optimize Service Restoration in Electrical Networks with Respect to the Probability of Transformers Failure : 8;**

Masoud Aminian (University Putra Malaysia, Malaysia); Ehsan Moazami (UPM, Malaysia); Maryam Mirzaei (UPM, Malaysia); Mohd Zainal Abidin Ab Kadir (Universiti Putra Malaysia, Malaysia)

**2:30 Distributed Generation Site and Size Allocation Through a Techno Economical Multi-objective Differential Evolution Algorithm : 95**

Hosein A. Hejazi (Mirkabir University of Technology, Iran); Maryam Akhavan Hejazi (Amirkabir University of Technology, Iran); Gevork B. Ghahreghpetian (Amirkabir University of Technology, Iran); Mehrdad Abedi (Amirkabir University of Technology, Iran)

**2:45 Energy Efficiency Based Asset Management Infrastructures in Electrical Distribution System : 9;**

Reza Dashti (Tehran University, Iran); Saeed Afsharnia (University of Tehran, Iran); Behnam Bayat (Repd, Iran); Ali Barband (Tehran regional province distribution system company, Iran); Vahid Khatami (University of Tehran, Iran)

**3:00 Phase Shifter Transformers Optimum Allocation in Power Systems Using a Combinational Method : : 7**

Mohsen Gitizadeh (Shiraz University of Technology, Iran); Hossein Khalilnezhad (Shiraz University of Technology, Iran)

**3:15 Contingency Based Congestion Management and Cost Minimization Using Bee Colony Optimization Technique : : 2**

M. A. Rahim (Universiti Teknologi MARA, Malaysia); Ismail Musirin (UiTM, Malaysia); Izham Zainal Abidin (UNITEN, Malaysia); Muhammad Murtadha Othman (UiTM, Malaysia)

**3:30 Assessment of Contribution-based Congestion Cost Allocation Using AC and DC for Bilateral Market : : 8**

Md Pauzi Abdullah (University Technology of Malaysia (UTM), Malaysia); Mohammad Yusri Hassan (University of Technology Malaysia (UTM), Malaysia); Faridah Hussin (University Technology of Malaysia, Malaysia)

**3:45 Operational Security Criterion of a Smart Grid ; 23**

Mohamed Shaaban (Universiti Teknologi Malaysia, Malaysia); Md Shah Majid (University of Technology Malaysia (UTM), Malaysia)

**S3H: Transmission and Distribution 3**  
**Session Chair: Prof. Dr. Khalid Mohd. Nor**  
**Room: Bahamas 2**

**2:00 Development Prospect of Smart Grid in India ; 27**

Parimal Acharjee (National Institute of Technology Durgapur, India); Jagadeesh Gunda (National Institute of Technology Durgapur, India)

**2:15 A Retrofit Network Transaction Data Logger and Intrusion Detection System for Transmission and Distribution Substations ; 32**

Thomas H Morris (Mississippi State University, USA); Kalyan Pavurapu (Mississippi State University, USA)

**2:30 Reliability and Availability Assessment of Transmission Overhead Line Protection System Using Reliability Block Diagram ; 38**

Mohd Iqbal Ridwan (TNB Research Sdn Bhd, Malaysia); Lee Yen Kerk (TNB, Malaysia); Bahisham Bt Yunus (UNITEN, Malaysia); Aminuddin Musa (TNB, Malaysia)

**2:45 Modelling of On-line Monitoring of Transformer Winding Radial Deformation Using UWB Sensors ; 44**

Ghassem Mokhtari (Amirkabir University of Technology, Iran); Gevork B. Gharehpetian (Amirkabir University of Technology, Iran); Reza Faraji-Dana (Center of Excellence on Applied Electromagnetic Systems, Iran); Maryam Akhavan Hejazi (Amirkabir university of Technology, Iran)

**3:00 Harmonic Analysis of Power Systems in Order to Network Conversion ; 48**

Reza Shariatinasab (Birjand University, Iran); Mohsen Akbari (K. N. Toosi University of Technology, Iran)

**3:15 Fault Location of HV Teed Feeder Based on Synchronized Voltage Measurement and Smooth Support Vector Machines ; 54**

Eyada A Alanzi (University Tenaga Nasional, Malaysia); Mahmoud Younis (University Tenaga Nasional, Malaysia)

**3:30 Evaluation of Surge Arrester Requirement for Overhead Transmission Line Using Electromagnetic Transient Program ; 59**

Jeremy Ong (University Teknikal Malaysia Melaka, Malaysia); Junainah Sardi (Universiti Teknikal Malaysia Melaka, Malaysia)

**3:45 An Efficient Controller Design of Doubly Fed Induction Generator and Operating Analysis of Isolated Microgrid Under Load Variations ; 63**

Hamid Soleimani-Bidgoli (University of Tehran, Iran); Saeed Afsharnia (University of Tehran, Iran); Mahmoud-Reza Haghifam (Tarbiat Modares University, Iran); Vahid Khatami (University of Tehran, Iran)

**S3I: Renewable Energy and Energy Efficiency 4**  
**Session Chair: Assoc. Prof. Ir. Dr. Zahrul Faizi Hussein**  
**Room: Copacobana**

**2:00 Moving Holidays' Effects on the Malaysian Peak Daily Load ; 69**

Fadhilah Abd. Razak (University Tenaga Nasional, Malaysia); Izham Z. Abidin (Universiti Tenaga Nasional, Malaysia); Mahendran Shitan (Universiti Putra Malaysia, Malaysia)

**2:15 Maximum Power Point Tracking for Photovoltaic Arrays with Minimum Sensors ; 74**

Milad Momayyezian (University of Tehran, Iran); Hossein Iman-Eini (University of Tehran, Iran)

**2:30 A Novel Analytical Solution for the PV-Arrays Maximum Power Point Tracking Problem ; 7:**

Ghias Farivar (University of Tehran, Iran); Behzad Asaei (University of tehran, Iran); Mohammad Ali Rezaei (University of Tehran, Iran)

**2:45 Challenges in Meeting Increasing Power Demand of Developing Economies Without Damaging the Environment ; 86**

Siong Lee Koh (Tunku Abdul Rahman University, Malaysia); Yun Seng Lim (Universiti Tunku Abdul Rahman, Malaysia)

**3:00 Photovoltaic Module Single Diode Model Parameters Extraction Based on Manufacturer Datasheet Parameters ; 92**

Ghias Farivar (University of Tehran, Iran); Behzad Asaei (University of tehran, Iran)

**3:15 Modeling and Simulation of Grid Connected Photovoltaic System for Malaysian Climate ; 98**

Hasimah Rahman (Universiti Teknologi Malaysia, Malaysia); Suresh Thanakodi (National Defence University of Malaysia, Malaysia); Assc. Prof. Dr. Mohammad Yusri Hassan (University Technology Malaysia, Malaysia); Khalid Mohamed Nor (Universiti Teknologi Malaysia, Malaysia); Md Shah Majid (University of Technology Malaysia(UTM), Malaysia); Faridah Hussin (University Technology of Malaysia, Malaysia)

**3:30 *Dynamic Behavior of PEM Fuel Cell and Gas Turbine Power Plant in Autonomous Mode* ; : 4**

Vahid Khatami (University of Tehran, Iran); Saeed Afsharnia (University of Tehran, Iran); Mahmoud-Reza Haghifam (Tarbiat Modares University, Iran); Hamid Soleimani-Bidgoli (University of Tehran, Iran)

**3:45 *Design of Grid-connected Photovoltaic System Using Evolutionary Programming* ; : :**

Shahril Irwan Sulaiman (Universiti Teknologi MARA, Malaysia); Titik Khawa Abdul Rahman (University Teknologi Mara, Malaysia); Ismail Musirin (Universiti Teknologi Mara, Shah Alam, Malaysia)