

# 6<sup>th</sup> International Conference on Clean Energy and Technology 2023

Bayview Hotel Georgetown Penang, Malaysia

7 - 8 June 2023

	<b>SRI MAS 1 (Parallel Session 1)</b>	<b>SRI MAS 3 (Parallel Session 2)</b>	<b>SRI PERAK 1 (Parallel Session 3)</b>	<b>SRI PERAK 3 (Parallel Session 4)</b>	
<b>7<sup>th</sup> June (Wednesday)</b>	Session A Presentation 11:00 am – 12:40 pm	<b>Session 1A Chair:</b> <ul style="list-style-type: none"> <li>• Prof. Dr. Ir. Ab Halim Abu Bakar</li> <li>• Dr. Azimah Omar</li> </ul>	<b>Session 2A Chair:</b> <ul style="list-style-type: none"> <li>• Associate Prof. Dr. Md Hasanuzzaman</li> <li>• Dr. Azam Akhbari</li> </ul>	<b>Session 3A Chair:</b> <ul style="list-style-type: none"> <li>• Dr. Siti Azrah Mohamad Samsuri</li> <li>• Dr. Siti Rohani Sheikh Raihan</li> </ul>	<b>Session 4A Chair:</b> <ul style="list-style-type: none"> <li>• Associate Prof. Dr. Shamsul Aizam Zulkifli</li> <li>• Dr. Tan Chia Kwang</li> </ul>
	Session B Presentation 2:15 pm – 3:55 pm	<b>Session 1B Chair:</b> <ul style="list-style-type: none"> <li>• Dr. Suhana Arshad</li> <li>• Dr. Amirul Syafiq Bin Abdul Jaafar</li> </ul>	<b>Session 2B Chair:</b> <ul style="list-style-type: none"> <li>• Prof. Ts. Dr. Jeyraj Selvaraj</li> <li>• Dr. Mohd Syukri Bin Ali</li> </ul>	<b>Session 3B Chair:</b> <ul style="list-style-type: none"> <li>• Dr. Mohamed Fathi Mohamed Elias</li> <li>• Dr. Azimah Omar</li> </ul>	<b>Session 4B Chair:</b> <ul style="list-style-type: none"> <li>• Prof. Dr. D. S. Badwaik</li> <li>• Ts. Dr. B. Vengadaesvaran</li> </ul>
	Session C Presentation 4:10 pm – 5:30 pm	<b>Session 1C Chair:</b> <ul style="list-style-type: none"> <li>• Dr. Siti Rohani Sheikh Raihan</li> <li>• Dr. Tan Chia Kwang</li> </ul>	<b>Session 2C Chair:</b> <ul style="list-style-type: none"> <li>• Prof. Dr. W. B. Gurnule</li> <li>• Dr. Che Hang Seng</li> </ul>	<b>Session 3C Chair:</b> <ul style="list-style-type: none"> <li>• Prof. Dr. Adarsh Kumar Pandey</li> <li>• Dr. Mohamed Fathi Mohamed Elias</li> </ul>	<b>Session 4C Chair:</b> <ul style="list-style-type: none"> <li>• Prof. Dr. Puppalwar</li> <li>• Ts. Dr. Jafferri Jamaludin</li> </ul>

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		<b>SRI MAS 1</b> <b>(Parallel Session 1)</b>	<b>SRI MAS 3</b> <b>(Parallel Session 2)</b>	<b>SRI PERAK 1</b> <b>(Parallel Session 3)</b>	<b>SRI PERAK 3</b> <b>(Parallel Session 4)</b>
<b>8<sup>th</sup> June (Thursday)</b>	Session D Presentation 9:00 am – 10:40 am	<b><i>Session 1D Chair:</i></b> <ul style="list-style-type: none"> <li>• Ts. Dr. B. Vengadaesvaran</li> <li>• Dr. Siti Rohani Sheikh Raihan</li> </ul>	<b><i>Session 2D Chair:</i></b> <ul style="list-style-type: none"> <li>• Dr. Tan Chia Kwang</li> <li>• Dr. Yushaizad Yusof</li> </ul>	<b><i>Session 3D Chair:</i></b> <ul style="list-style-type: none"> <li>• Prof. Dr. S. P. Puppalwar</li> <li>• Dr. Siti Azrah Mohamad Samsuri</li> </ul>	<b><i>Session 4D Chair:</i></b> <ul style="list-style-type: none"> <li>• Prof. Dr. Ab Halim Abu Bakar</li> <li>• Dr. Mohd Syukri Bin Ali</li> </ul>
	Session E Presentation 10:55 am – 12:55 pm	<b><i>Session 1E Chair:</i></b> <ul style="list-style-type: none"> <li>• Prof. Dr. Rajesh H. Gupta</li> <li>• Dr. Suhana Arshad</li> </ul>	<b><i>Session 2E Chair:</i></b> <ul style="list-style-type: none"> <li>• Prof. Ts. Dr. Jeyraj Selvaraj</li> <li>• Dr. Azam Akhbari</li> </ul>	<b><i>Session 3E Chair:</i></b> <ul style="list-style-type: none"> <li>• Dr. Mohamed Fathi Mohamed Elias</li> <li>• Dr. Siti Azrah Mohamad Samsuri</li> </ul>	<b><i>Session 4E Chair:</i></b> <ul style="list-style-type: none"> <li>• Dr. Che Hang Seng</li> <li>• Dr. Yushaizad Yusof</li> </ul>
	Session F Presentation 2:15 pm – 4:35 pm	<b><i>Session 1F Chair:</i></b> <ul style="list-style-type: none"> <li>• Dr. Muhammad Shakeel</li> <li>• Dr. Tan Chia Kwang</li> </ul>	<b><i>Session 2F Chair:</i></b> <ul style="list-style-type: none"> <li>• Prof. Ts. Dr. Jeyraj Selvaraj</li> <li>• Ts. Dr. B. Vengadaesvaran</li> </ul>	<b><i>Session 3F Chair:</i></b> <ul style="list-style-type: none"> <li>• Dr. Siti Rohani Sheikh Raihan</li> <li>• Dr. Amirul Syafiq Bin Abdul Jaafar</li> </ul>	<b><i>Session 4F Chair:</i></b> <ul style="list-style-type: none"> <li>• Ts. Dr. Jafferi Jamaludin</li> <li>• Dr. Azimah Omar</li> </ul>

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	Time	Paper ID	Title	Initial Topic	Authors/University/Country
<b>Session 1A</b> <b>7<sup>th</sup> June 2023</b> <b>Sri Mas 1</b>  <b>Session Chair:</b> Prof. Dr. Ir. Ab Halim Abu Bakar  <b>Co-Chair:</b> Dr. Azimah Omar	11:00 - 11:20	<b>121</b>	<b>Invited Speaker 1:</b> <b>Dr. Abdul Hanif Bin Dato' Paduka Hj Mahadi</b>  CO2 As a Sustainable Carbon Feedstock for Fuel Production	Renewable and Sustainable Energy	Abdul Hanif Mahadi, Universiti Brunei Darussalam
	11:20 - 11:40	<b>63</b>	Resource Recovery from Palm Kernel Shell and Its Application for Wastewater Treatment: A Circular Economy Approach	Renewable and Sustainable Energy	Yan Ying Tan, Mohd Izzudin Izzat Zainal Abidin, Archina Buthiyappan, Abdul Aziz Abdul Raman, UM
	11:40 - 12:00	<b>24</b>	A Method to Map the Levelised Cost of Hydrogen from Offshore Wind Farms Coupled to Onshore Electrolysers Via HVDC	Renewable and Sustainable Energy	Quang Vu Dinh, Van Nguyen Dinh, Paul Leahy, University College Cork, Ireland
	12:00 - 12:20	<b>57</b>	Parametric Optimisation of a Dual Cantilever Flutter for Electromagnetic Wind Energy Harvesting	Renewable and Sustainable Energy	V R Velusamy, F M Foong, N A R Nik Mohd, C K Thein, UTM
	12:20 - 12:40	<b>40</b>	Anaerobic Digestion of Palm Oil Mill Effluent (POME) and Impact of Incorporation with Palm Oil Fuel Ash (POFA)	Renewable and Sustainable Energy	P L Soo, L P Wong, M J K Bashir, UTAR

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<b>Session 2A</b> <b>7<sup>th</sup> June 2023</b> <b>Sri Mas 3</b>  <b>Session Chair:</b> Associate Prof. Dr. Md Hasanuzzaman  <b>Co-Chair:</b> Dr. Azam Akhbari	11:00 - 11:20	<b>92</b>	<b>Invited Speaker 7:</b> <b>Assoc. Prof. Dr. Ahmad Azmin Mohamad</b>  Using Chitosan, a Biopolymer, as a Binder for Graphene in Supercapacitor Electrodes	Energy Conversion, Delivery and Storage	Ahmad Azmin Mohamad, Nor Azmira Salleh, USM
	11:20 - 11:40	<b>79</b>	Structural And Magnetic Investigation on Cr <sup>3+</sup> Substituted Mn <sub>0.25</sub> Cu <sub>0.25</sub> Zn <sub>0.5</sub> Fe <sub>2</sub> O <sub>4</sub> Nano Ferrites by Co-Precipitation Route	Energy Conversion, Delivery and Storage	Bhaurao R Balbudhe, Dilip S Badwaik, Rupesh S Wandhare, Ajay Sharma, Sarang R Daf, Shrikant M. Suryawanshi, Kamla Nehru Mahavidyalaya, India
	11:40 - 12:00	<b>61</b>	Integrated Carbon Dioxide Capture and Utilization: Recent Developments and Techno-Economic Assessment	Energy Conversion, Delivery and Storage	Xing Gang Zhang, Abdul Aziz Abdul Raman, Jegalakshimi Jewaratnam, Archina Buthiyappan, UM
	12:00 - 12:20	<b>33</b>	Development of Graphical User Interface for Boost Converter Employing Visual Studio	Energy Conversion, Delivery and Storage	Krismadinata, Firstia Bevi Aulia, Fivia Eliza, Universitas Negeri Padang
	12:20 - 12:40	<b>41</b>	Voltage and Frequency Regulation Induction Generator Employing AC-AC Converter	Energy Conversion, Delivery and Storage	Krismadinata, Derry Fiandri, Asnil, Irma Husnaini, Universitas Negeri Padang

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	11:20 - 11:40	<b>20</b>	Study on the Process of Purification of Zinc Sulfate Solutions from Impurities and Their Rheological Properties	Renewable and Sustainable Energy	Diyorbek Absattorov, Jasur Makhmayorov, Bakhodir Abdullayev, Sherzod Qodirov, Farrukh Davlatov, Ilkham Usmanov, Murodjon Samadiy, Tashkent Chemical Technological Institute, Uzbekistan
	11:40 - 12:00	<b>46</b>	Microalgae Cultivation in Flat Panel Photobioreactor as A Method of Carbon Capture: A Review	Renewable and Sustainable Energy	Nur Aqila Syafiqa Abdul Nuri, Noor Illi Mohamad Puad, Azlin Suhaida Azmi, Farah Ahmad, IIUM
	12:00 - 12:20	<b>49</b>	Development of Low Cost Pyranometer IoT Based Solar Irradiance Measurement Station	Renewable and Sustainable Energy	Matthew T M Lim, Rodney H G Tan, G A Tan, C H Hew, W K Lee, Mohammed Mercha, UCSI
	12:20 - 12:40	<b>54</b>	Development of Panchromatic Push-pull Dye Sensitizers: Theoretical and Experimental Investigations for Photovoltaic Applications	Renewable and Sustainable Energy	Liesel Estrella-Pajulas, Silliman University Dumaguete City, Philippines

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	11:20 - 11:40	<b>98</b>	pH Influenced Synthesis and Characterization of Ni <sub>0.3</sub> Cu <sub>0.3</sub> Zn <sub>0.4</sub> Fe <sub>2</sub> O <sub>4</sub> Nano Ferrite for Energy Storage and High Frequency Applications	Energy Conversion, Delivery and Storage	Shrikant M. Suryawanshi, Dilip S. Badwaik, Pushpalata S. Hedao, Vijay V. Warhate, Vandana D. Badwaik, Pranali P. Lekurwade, Kamla Nehru Mahavidyalaya, India
	11:40 - 12:00	<b>131</b>	Microalgae Cultivation: From CO <sub>2</sub> Fixation to Single-Cell Protein Production	Energy Conversion, Delivery and Storage	Soumayat Ali Ibrahim Mze, Azlin Suhaida Azmi, Noor Illi Mohd Puad, Farah Ahmad, Firdaus Abd Wahab, Syarifah Nor Faizah Sy Abd Rahman, IIUM
	12:00 - 12:20	<b>111</b>	Design of Specific Polymer Binders for Stabilization of Si Based Anode in LIB	Energy Conversion, Delivery and Storage	Noriyoshi Matsumi, JAIST
	12:20 - 12:40	<b>125</b>	Investment Feasibility Study of Gas Station Facility at X Port Area in Sumatra Island, Indonesia	Energy Conversion, Delivery and Storage	Aini Farmania, Riska Dwindi Elsyah, Bina Nusantara University, Indonesia

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<b>Session 1B</b> <b>7<sup>th</sup> June 2023</b> <b>Sri Mas 1</b>  <b>Session Chair:</b> Dr. Suhana Arshad  <b>Co-Chair:</b> Dr. Amirul Syafiq Bin Abdul Jaafar	14:15 - 14:35	<b>87</b>	<b>Invited Speaker 12:</b> <b>Dr. W. B. Gurnule</b>  Mechanical and Thermal Stability of Styrene-Butadiene Rubber in Presence of Nano Clay	Low Carbon Buildings and Cities	W. B. Gurnule, Kamla Nehru Mahavidyalaya, India
	14:35 - 14:55	<b>95</b>	Solution-Processed Lead-Free Cesium Titanium Halide Perovskites and Their Structural and Optical Characteristics	Renewable and Sustainable Energy	Sameen Aslam, Siti Azrah Mohamad Samsuri, USM
	14:55 - 15:15	<b>81</b>	Synthesis and Characterization of Palm Based Magnetic Biochar Silicon Composite for Lithium-Ion Battery Application	Renewable and Sustainable Energy	Narmatha Gopalakrishnan, Shahid Bashir, B. Vengadaesvaran, N. A. Rahim, Arasu Uttran, UMPEDAC
	15:15 - 15:35	<b>69</b>	Fabrication of Polymer-based Antiviral Coating using Polyethylene Glycol (PEG) and Acrylic Resin as Binder	Renewable and Sustainable Energy	S. Reasmyraj, A. Syafiq, B. Vengadaesvaran, M. Shakeel Ahmad, Nasrudin A.Rahim, UMPEDAC
	15:35 - 15:55	<b>74</b>	Synthesis and Characterization of Palm Based Magnetic Bio- Char as Electrode Material for Lithium-Ion Battery	Renewable and Sustainable Energy	Yogini Gunasekaran, Shahid Bashir, B. Vengadaesvaran, Nasrudin Abd Rahim, Arasu Uttran, UMPEDAC

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<b>Session 2B</b> <b>7<sup>th</sup> June 2023</b> <b>Sri Mas 3</b>  <b>Session Chair:</b> Prof. Ts. Dr. Jeyraj Selvaraj  <b>Co-Chair:</b> Dr. Mohd Syukri Bin Ali	14:15 - 14:35	<b>136</b>	<b>Invited Speaker 8:</b> <b>Dr. Siti Nur Amira Binti Shaffee</b>  Ammonia: Enabling the Hydrogen Economy	Hydrogen Economy	Siti Nur Amira Binti Shaffee, PETRONAS Research Sdn. Bhd.
	14:35 - 14:55	<b>84</b>	Development of Hybrid Self-Cleaning Coating Employing Lanthanide-Based Light Spectral Response Material to Enhance Photovoltaic (PV) Panel Efficiency	Energy Efficiency	Khishn Kumar Kandiah, A. Syafiq, B. Vengadaesvaran, S.Ramesh, K.Ramesh, A.K.Pandey, UMPEDAC
	14:55 - 15:15	<b>47</b>	Design And Analysis of Earth-Air Heat Exchanger Integrated into The Building Ventilation System	Energy Efficiency	Remon Lapisa, Andre Kurniawan, Jasman, Waskito, Purwantono, Arwizet, Dori Yuvenda, Dieter Rahmadiawan, Ambiyar, Universitas Negeri Padang, Indonesia
	15:15 - 15:35	<b>106</b>	Experimental Investigation of Nucleate Pool Boiling Heat Transfer Characteristics on Modified Copper Surface Via Laser-Structured Microstructures	Energy Efficiency	L Sugumaran, M N M Zubir, K M S Newaz, T Z T Zahari, S M Aznam, A M Halil, UM
	15:35 - 15:55	<b>134</b>	Designing a Practical Buck Converter Experiment for Undergraduate Students	Energy Policy and Education	Yushaizad Yusof, Radin Za'im, Mohd Ridhwan Abd Ghaffar, UKM



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	14:35 - 14:55	<b>73</b>	The Effect of Number of Blades on the Horizontal Axis Water Turbine Performance	Renewable and Sustainable Energy	Noviando Yulio, Safarudin Gazali Herawan, Rienna Oktarina, Oki Setyandito, Ernie Binti Mat Tokit, Fatimah Al-Zahra Binti Mohd Sa'at, Mohamad Afzanizam Bin Mohd. Rosli, Bina Nusantara University, Indonesia
	14:55 - 15:15	<b>16</b>	Implementation and Impact of Graph Theory Algorithm in Z-Source Breaker for The Protection of DC Microgrid	Renewable and Sustainable Energy	S Faazila Fathima, L Premalatha, Vellore Institute of Technology, India
	15:15 - 15:35	<b>43</b>	Phase Change Materials Integrated Buildings: A Short Review	Renewable and Sustainable Energy	Jeeja Jacob, John Paul, Jeyraj Selvaraj, Nasrudin Abd Rahim, A K Pandey, Mahesh Vaka, UMPEDAC
	15:35 - 15:55	<b>56</b>	Utilization of <i>Calliandra calothyrsus</i> and <i>Gliricidia sepium</i> As Co-Firing Fuel with Consideration of Ash-Related Issues	Renewable and Sustainable Energy	H P Putra, F M Kuswa, Prabowo, Hariana, Sepuluh Nopember Institute of Technology, Indonesia

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	14:35 - 14:55	<b>42</b>	Daylight Performance of Horizontal Light Pipe and Shading Systems in Office Room with Bilateral Opening	Low Carbon Buildings and Cities	F Elsiana, SNN Ekasiwi, IGN Antaryama, Institut Teknologi Sepuluh Nopember, Indonesia
	14:55 - 15:15	<b>53</b>	Smart Cities in India: A Bibliometric Analysis	Low Carbon Buildings and Cities	Paribhasha Sharma, Jindal Global Business School, India
	15:15 - 15:35	<b>19</b>	An Experimental Study of Compression Loading on Fin Heat Exchanger Based on Metal Foam and Thermal Interface Material (TIM)	Energy Efficiency	Poo Balan A/L Ganesan, UM
	15:35 - 15:55	<b>37</b>	Effect Of Fin Spacing on The Vibration-Assisted Thermal Performance of Heat Sink	Energy Efficiency	Ambagaha Hewage Dona Kalpani Rasangika, Mohammad Shakir Nasif, William Pao, Rafat Al-Waked, UTP

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	16:30 - 16:50	<b>117</b>	A Simulation Study of Solar and Energy Storage Systems to Improve Electric Vehicle Charging Performance	Renewable and Sustainable Energy	M.I. Mohd Mawardi, N. H. Nik Ali, Muhammad Nabil Hidayat, Ezmin Abdullah, Muhammad Umair, Ahmad Sukri Ahamad, UiTM
	16:50 - 17:10	<b>88</b>	Low Cost Power Monitoring System with Electric Bill Calculation	Low Carbon Buildings and Cities	A F Asmadi, S A Zulkifli, M F Mazelan, T W B Leong, UTHM
	17:10 - 17:30	<b>66</b>	Prospects of Green Adsorbent Produced from Avocado Seed via Hydrothermal Carbonization for Treatment of Dye Wastewater	Renewable and Sustainable Energy	Fathimath Afrah Solih, Abdul Aziz Abdul Raman, Archina Buthiyappan, UM

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<b>Session 2C</b> <b>7<sup>th</sup> June 2023</b> <b>Sri Mas 3</b>  <b>Session Chair:</b> Prof. Dr. W. B. Gurnule  <b>Co-Chair:</b> Dr. Che Hang Seng	16:10 - 16:30	<b>91</b>	Electrochemical Fabrication and Characterizations of Ag/AgCl Pseudo-reference Electrode: A Preliminary Study	Electrical Machines and Drives	K P Beh, R Y Thong, N S Saipul, F K Yam, K K Beh, A A Manaf, C W Oo, Z Hassan, USM
	16:30 - 16:50	<b>21</b>	Towards A Low-Carbon Recycling Society: Carbon Mitigation Through the Introduction of Distributed Recycling System	Low Carbon Buildings and Cities	Shoki Kosai, Keita Kozaki, Shunsuke Kashiwakura, Eiji Yamasue, Ritsumeikan University, Japan
	16:50 - 17:10	<b>45</b>	Carbon Dioxide Hydrogenation to Value-added Products using Cu-Based Catalytic Materials	Hydrogen Economy	Rim Ismail, Mohamed Ali H. Saad, Ali Sardar, Abdelbaki. Benamor, Qatar University
	17:10 - 17:30	<b>124</b>	Process Optimization of Integrated Hydrogen Production Process with Local Resources	Hydrogen Economy	C L M Eh, A N T Tiong, J Kansedo, W P Q Ng, C H Lim, B S How, Curtin University Malaysia

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	16:30 - 16:50	<b>18</b>	Investigation of the Process of Extraction of Copper from Dust of Electric Filters of Oxygen-flare Smelting Furnace with Sulfuric, Thermal, and Extractive Phosphoric Acid	Renewable and Sustainable Energy	Dilbar Ramazonova, Zokirjon Turayev, Bakhodir Mamurov, Aisholpan Shamishova, Diyorbek Absattorov, Jasur Makhmayorov, Ilkham Usmanov, Murodjon Samadiy, Tashkent Chemical Technological Institute, Uzbekistan
	16:50 - 17:10	<b>67</b>	Investigation the Influence of Inclination Angle for Flat Plate Solar Air Collector Through Experiment and Simulation	Renewable and Sustainable Energy	S Y Wong, K Gobi, C H Lim, K S Ong, UTAR
	17:10 - 17:30	<b>103</b>	Feasibility Study on Electricity Generation in Kg. Sabur Pulau Banggi Malaysia from Wind Energy Using HOMER Software	Renewable and Sustainable Energy	Y. N. S. Kumar, M. Z. H. Makmud, A. S. A. Hamid, A. B. A. Rahman, M. T. Miskon, S. Salleh, UMS

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<b>Session 4C</b> <b>7<sup>th</sup> June 2023</b> <b>Sri Perak 3</b>  <b>Session Chair:</b> Associate Prof. Dr. Shamsul Aizam Zulkifli  <b>Co-Chair:</b> Ts. Dr. Jafferri Jamaludin	16:10 - 16:30	<b>112</b>	Cogging Torque Reduction for Permanent Magnet Structure of Radial Flux Permanent Magnet Generator	Electrical Machines and Drives	Nur Afiqah Mostaman, Erwan Sulaiman, Mahyuzie Jenal, UTHM
	16:30 - 16:50	<b>130</b>	Slot-Pole Structure Investigation for Radial Flux Permanent Magnet Generator	Electrical Machines and Drives	Nur Afiqah Mostaman, Erwan Sulaiman, Mahyuzie Jenal, Irfan Ali Soomro, UTHM
	16:50 - 17:10	<b>100</b>	Design of 6 Slots/10 Poles Modular Rotor Sandwich Switched Flux Switching Permanent Magnet Motor	Electrical Machines and Drives	Irfan Ali Soomro, Erwan Bin Sulaiman, Mahyuzie Bin Jenal, MD Zarafi Bin Ahmad, Nur Afiqah Binti Mostaman, UTHM
	17:10 - 17:30	<b>123</b>	Performance Analysis of V-Shape Magnets Sandwich Switched Flux Switching Permanent Magnet Motor Using Modular	Electrical Machines and Drives	Irfan Ali Soomro, Erwan Bin Sulaiman, Mahyuzie Bin Jenal, MD Zarafi Bin Ahmad, Nur Afiqah Binti Mostaman, UTHM

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	09:20 - 09:40	<b>146</b>	<b>Invited Speaker 13:</b> <b>Assoc. Prof. Dr. Md. Hasanuzzaman</b>  Challenges in the Energy Sector, Prospects and Progress of Energy Research	Renewable and Sustainable Energy	Md. Hasanuzzaman, UMPEDAC
	09:40 - 10:00	<b>86</b>	Thermal Degradation Studies of 2-Amino 6-nitrobenzothiazole-Oxamide Formaldehyde Copolymer and Its Composites	Renewable and Sustainable Energy	W. B. Gurnule, Punam G. Gupta, R. H. Gupta, Y. U. Rathod, N. B. Singh, Kamla Nehru Mahavidyalaya, India
	10:00 - 10:20	<b>35</b>	Incorporation of Bi Sintering Aid to TiO <sub>2</sub> Photoanode for Low Temperature Dye Sensitized Solar Cell	Renewable and Sustainable Energy	H Khir, A K Pandey, R Saidur, M S Ahmad, N A Rahim, Sunway University
	10:20 - 10:40	<b>90</b>	Studies in the Influence of D- $\pi$ -A Pyrenyl Chalcone Containing Methoxy Substitution as Dye-Sensitizer in DSSC	Renewable and Sustainable Energy	S N A Mohd Nizar, M M Rosli, S A Mohamad Samsuri, I Abdul Razak, S Arshad, USM

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	09:20 - 09:40	<b>82</b>	The Effect of Vehicle-to-Grid Integration on Power Grid Stability – A Review	EV Charger	Muhammad Umair, Nabil M Hidayat, N. H. Nik Ali, Ezmin Abdullah, Ahmad Rais bin Johari, Tomomi Hakomori, UiTM
	09:40 - 10:00	<b>83</b>	Improvement in the Driving Range of Electric Vehicles for Malaysian Market – A Review	Electric Mobility	Muhammad Umair, Nabil M Hidayat, Ezmin Abdullah, N. H. Nik Ali, Tomomi Hakomori, Takashi Suzuki, UiTM
	10:00 - 10:20	<b>29</b>	Electric Vehicle Energy Consumption Modelling and Analysis: A Malaysia Case Study	Electric Mobility	Mohd Syahmi Hashim, Muhamad Mansor, Yong Jia Ying, Vigna Kumaran Ramachandaramurthy, Nazaruddin Abd. Rahman, UNITEN
	10:20 - 10:40	<b>119</b>	Vehicle-to-Grid System Optimization for Electric Vehicle – A Review	Vehicle-to-Grid (V2G) Technology	M.A. Abu Hassan, Ezmin Abdullah, N. H. Nik Ali, Muhammad Nabil Hidayat, Muhammad Umair, Ahmad Rais bin Johari, UiTM



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	09:20 - 09:40	<b>99</b>	Potential of New Pyrene Based Chalcone as Dye on DSSC Solar Cell and Optical Limiting	Renewable and Sustainable Energy	Saleh K. Alsaee, Ibrahim Abdul Razak, Suhana Arshad, Elham Mzwd, Dian Alwani Zainuri, Murad Bahadi, USM
	09:40 - 10:00	<b>51</b>	Investigating The Optical Absorption and Thermal Conductivity of Nano-Enhanced Lauric Acid Phase Change Material for Energy Storage Application	Renewable and Sustainable Energy	Yasir Ali Bhutto, A. K. Pandey, R. Saidur, Imtiaz Ali Laghari, D. Buddhi, V.V. Tyagi, Sunway University
	10:00 - 10:20	<b>1</b>	MEAMOMU	Renewable and Sustainable Energy	Gregory Spaulding, Magnetic Voltage Source, Sunrise, Florida, United States
	10:20 - 10:40	<b>17</b>	A Review on the Performance of Non-Additive Blended Fuel (Ethanol-Gasoline) in Spark Ignition Engines	Renewable and Sustainable Energy	A.J Alimin, O.K Babalola, UTHM

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	09:20 - 09:40	<b>113</b>	A Review: Partial Discharge in Medium Voltage Cross-linked Polyethylene XLPE Cable	Power System and Smart Grid	Nur Syazwani binti Abdul Bahari, Tze Mei Kuan, Azrul bin Mohd Ariffin, UNITEN
	09:40 - 10:00	<b>105</b>	Effect of Renewable Energy on Environmental Sustainability in Nigeria: Does Economic Growth Matter?	Renewable and Sustainable Energy	Hussaini Bala, Tishk International University, Iraq
	10:00 - 10:20	<b>3</b>	Low Harmonics Plug-in Home Charging Electric Vehicle Battery Charger Utilizing Multi-Level Rectifier, Zero Crossing and Buck Chopper Part6: Zero Cross and IGBT Firing Sequence Control	EV Charger	Halina Hassan, Saharul Arof, Philip Mawby, H. Arof, Emilia Noorsal, UniKL
	10:20 - 10:40	<b>94</b>	How The Presence of Public Charging Infrastructure Can Impact the Adoption Rate of Electric Vehicles in the UK	EV Charger	Sahba Ghiasi Hafezi, Risa Morimoto, SOAS University of London, UK

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	11:15 - 11:35	<b>80</b>	<b>Invited Speaker 2:</b> <b>Ts. ChM. Dr. Muhd Firdaus Bin Kasim</b>  Nickel-rich Cathode Materials for Rechargeable Lithium-ion Batteries	Energy Conversion, Delivery and Storage	Muhd Firdaus Bin Kasim, UiTM
	11:35 - 11:55	<b>101</b>	Optical Performance and Chemical Stability Evaluation of New Era Phase Change Material: Activated by Hybrid Nanoparticle	Energy Conversion, Delivery and Storage	AK Pandey, B Kalidasan, Reji Kumar R, Mathew George, Sunway University
	11:55 - 12:15	<b>36</b>	Thermodynamic And Thermal Degradation Kinetics Analysis of Coconut Shell Biomass Based Phase Change Material	Energy Conversion, Delivery and Storage	B Kalidasan, AK Pandey, Saidur Rahman, D Buddhi, VV Tyagi, Sunway University
	12:15 - 12:35	<b>97</b>	Surfactant role in nano-enhanced phase change materials	Energy Conversion, Delivery and Storage	N K Noran, A K Pandey, Nasrudin Abd Rahim, Jeyraj Selvaraj, D Buddhi, V V Tyagi, UMPEDAC
	12:35 - 12:55	<b>96</b>	Quantification of cogeneration vulnerability towards the climate change: framework development	Energy Efficiency	E Fedotova, S Krashennnikov, Moscow Power Engineering Institute, Russia

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	11:15 - 11:35	<b>140</b>	<b>Invited Speaker 6:</b> <b>Assoc. Prof. Dr. Mohd Muzamir Bin Mahat</b> Conducting Polymers Membrane as Potential Separator in Green Electrochemical Recycling of Lithium- ions Batteries - An Insight & Preliminary Measurements	Battery Storage Technology	Mohd Muzamir Bin Mahat, UiTM
	11:35 - 11:55	<b>31</b>	A Real-Time Thermal Behaviour Monitoring and Analysis of a 500 kWh Grid-Connected Battery Energy Storage System	Battery Storage Technology	Afif Firdaus Shahroom, Muhammad bin Mansor, Yong Jia Ying, Muhamad Safwan Abd. Rahman, UNITEN
	11:55 - 12:15	<b>122</b>	A Simulation-Based Investigation into the Charging Performance of Lithium-ion and Lead-acid Batteries in Electric Vehicles	Battery Storage Technology	M.A. Noor Zelan, Nabil M Hidayat, Nurfarizza Surhada M Nasir, N. H. Nik Ali, Ezmin Abdullah, Muhammad Umair, Mohamad Zaid Zulkifly, UiTM
	12:15 - 12:35	<b>93</b>	Morphological and Ionic Conductivity Studies of Overoxidized Polypyrrole/Polyvinylidene Fluoride as Promising Membrane Material for Electrochemical Lithium Recycling	Renewable and Sustainable Energy	Mohamad Arif Kasri, Muhammad Faiz Aizamddin, Muhammad Zharfan Mohd Halizan, Siti Nur Amira Shafee, Awatif binti Hassim, Nur Najiha Binti Maliaman, Saiful 'Ariffin Shafiee, Norazah Abd Rahman, Mohd Muzamir Mahat, IIUM
	12:35 - 12:55	<b>102</b>	Investigative Study of Cost-Effective ZrO <sub>2</sub> Nanoparticles/Acrylic Based Diaphragm for Alkaline Electrolyzers	Energy Conversion, Delivery and Storage	Abdul Qayoom, Muhammad Shakeel Ahmad, Jeyraj Selvaraj, RahadianZainul, Nasrudin Abd Rahim, UMPEDAC

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	11:15 - 11:35	<b>120</b>	Structural and Morphological Studies of Fe doped $\text{LiNi}_{0.8}\text{Co}_{0.15}\text{Al}_{0.05}\text{O}_2$ (NCA) Cathode Materials for Rechargeable Lithium-Ion Batteries	Battery Storage Technology	L. Isti'Adzah, M.F. Kasim, K. A. Elong, A. Azahidi, F. I. Saaid, A. A. Mohamad, UiTM
	11:35 - 11:55	<b>126</b>	Effect of Annealing Time on The Structural Stability of $\text{LiCo}_{0.55}\text{Ni}_{0.4}\text{Ti}_{0.05}\text{O}_2$ Cathode Material Via Combustion Method	Battery Storage Technology	A Azahidi, K Elong, N Kamarulzaman, M F Kasim, UiTM
	11:55 - 12:15	<b>108</b>	BIAN-Bismarck Brown-based Imine and Azo Functionalized Polymer as Anodic Active Material in Li-ion Secondary Batteries	Battery Storage Technology	Bharat Srimitra Mantripragada, Rajashekar Badam, Noriyoshi Matsumi, JAIST
	12:15 - 12:35	<b>110</b>	Study of Storage and Rate Capability of Lithium-Ion Secondary Batteries Using Bithiophene Containing Imine-Based Conjugated Polymer as Anodic Active Material	Battery Storage Technology	Saibrata Punyasloka, Noriyoshi Matsumi, JAIST
	12:35 - 12:55	<b>129</b>	Design And Simulate an Amine-Based $\text{CO}_2$ Capture Process for A Steam Methane Reforming Hydrogen Production Plant	Energy Conversion, Delivery and Storage	Ali Mahmoud Hamed, Tengku Nordayana Akma Tuan Kamaruddin, Nabilah Ramli, Mohd Firdaus Abdul Wahab, IIUM

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	11:15 - 11:35	<b>70</b>	Design and Development of Latex Cup Collector Robot	Electric Mobility	Pey Wen Khor, Jia Jing Ooi, Chong Hooi Lim, Yee Chyan Tan, UTAR
	11:35 - 11:55	<b>145</b>	Correlation Between Property Market Value and EV Ownership Affordability in Klang Valley	Electric Mobility	Nur Iffika Ruslan, Ahmad Rosly Abbas, Dr. Masitah Alias, Nurfaziera Rahim, TNBR
	11:55 - 12:15	<b>6</b>	Genetics Algorithm Setting Up Look-Up table in Field Weakening Mode of Series Motor Four Quadrants Drive DC Chopper	Electric Mobility	N.M.Yaakop,Saharul Arof, Philip Mawby, H. Arof, Emilia Noorsal, UniKL
	12:15 - 12:35	<b>60</b>	Collective Water Transport Electrification: Venetian Ferry Boat Case Study	Electric Mobility	Cristian Giovanni Colombo, Alessandro Saldarini, Michela Longo, Morris Brenna, Fabio Borghetti, Politecnico di Milano, Italy

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	14:35 - 14:55	<b>38</b>	Influence Of Distribution Zone for Proton Exchange Membrane Fuel Cell	Fuel Cell	B H Lim, C T A Sarjuni, E H Majlan, M I Rosli, UKM
	14:55 - 15:15	<b>48</b>	Exploring the Effects of Silver Nanoparticle Addition on The Properties of Paraffin Wax Phase Change Material	Renewable and Sustainable Energy	Anas Islam, Adarsh Kumar Pandey, R. Saidur, D. Buddhi, V.V. Tyagi, Sunway University
	15:15 - 15:35	<b>89</b>	Preliminary Study of The Dual Power Source System For 11kV Manufacturing Substation's Battery Charger	Renewable and Sustainable Energy	Putri Falyana Balqis Faizil Anuar, Nurfadzilah Ahmad, UiTM
	15:35 - 15:55	<b>65</b>	Activated Hydrochar Derived from Coconut Shell and Microalgae Through Hydrothermal Carbonization for the CO <sub>2</sub> Adsorption	Renewable and Sustainable Energy	Nuradila Zahirah Mohd Azmi, Abdul Aziz Abdul Raman, Nor Adilla Rashidi, Muhammad Fazly Abdul Patah, Archina Buthiyappan, UM
	15:55 - 16:15	<b>85</b>	Electrolyte Optimization Study on Dry Cell Generator Electrolysis System for Producing Hydrogen Gas using RSM (Response Surface Method)	Renewable and Sustainable Energy	Efran Ustia Rahmad, Rida Oppi Ramadhani, Muhammad Shakeel Ahmad, Yohandri, Amalia Putri Lubis, Ganefri, Rahadian Zainul, Universitas Negeri Padang, Indonesia

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	14:35 - 14:55	<b>2</b>	Electrification Effects on Quality of Life in South East Asia: A Comparison of Narratives in Malaysia and The Philippines	Renewable and Sustainable Energy	Jordi Cravioto, Hideaki Ohgaki, Tan Chia Kwang, Che Hang Seng, Kyoto University
	14:55 - 15:15	<b>107</b>	Effects of Water Washing and Torrefaction Pre-Treatments in Enhancing Fuel Properties of Empty Fruit Bunches	Renewable and Sustainable Energy	Mohamad Azri Sukiran, Nor Jumanah Said Mohamed, Abu Bakar Nasrin, Nurul Adela Bukhari, Vijaya Subramaniam, Astimar Abdul Aziz, Soh Kheang Loh, MPOB
	15:15 - 15:35	<b>116</b>	Modeling and Analysis of Rooftop Solar Photovoltaic System for Educational Institution in Malaysia	Renewable and Sustainable Energy	Muhammad Firdaus Mohd Zublie, Md. Hasanuzzaman, Nasrudin Abd Rahim, UMPEDAC
	15:35 - 15:55	<b>132</b>	Identifying the Potential of Metal-air Batteries (MABs) as Utility Grid Energy Storage in Malaysia - A Macro-Review Supplies an Overview of Significant Issues in MABs	Battery Storage Technology	Nurfarizza Surhada Mohd Nasir, Dzariff Zainal Abidin, Nurul Atikah Mohd Mohktar, Siti Nur Amirah Shaffee, M Zaid Zolkiffly, Petronas Research Sdn. Bhd.
	15:55 - 16:15	<b>39</b>	Challenges in State of Health (SoH) and Remaining useful Life (RuL) Estimation of Second Life Batteries for Energy Storage Applications	Battery Storage Technology	Vignesh S, Hang Seng Che, Jeyraj A/L Selvaraj, UMPEDAC
	16:15 - 16:35	<b>133</b>	How Many Trees Are Required to Offset the CO <sub>2</sub> Emissions from Building Operations? A Case Study of Energy Efficiency Initiatives in Wisma R&D, Universiti Malaya Building	Low Carbon Buildings and Cities	Siti Birkha Mohd Ali, Wan Nazirah Wan Md Adnan, Anis Sabirin Baharom, Md Hasanuzzaman, Nasrudin A. Rahim, UMPEDAC



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	14:35 - 14:55	<b>118</b>	Investment Feasibility Study of Storage Business at X Port Area in Sumatera Island, Indonesia	Energy Conversion, Delivery and Storage	Aini Farmania, Riska Dwindi Elsyah, Bina Nusantara University, Indonesia
	14:55 - 15:15	<b>144</b>	Environmentally Friendly Supercapacitors to Combat Climate Change	Energy Conversion, Delivery and Storage	Shahid Bashir, Nasrudin Abd Rahim, S. Ramesh, K. Ramesh, B. Vengadaesvaran, UMPEDAC
	15:15 - 15:35	<b>55</b>	Development Low-Cost Processor for Photovoltaic Simulator	Energy Conversion, Delivery and Storage	Asnil, Krismadinata, Irma Husnaini, Erita Astrid, Universitas Negeri Padang, Indonesia
	15:35 - 15:55	<b>127</b>	A Review on Blue and Green Hydrogen Production Process and Their Life Cycle Assessments	Renewable and Sustainable Energy	Ali Mahmoud Hamed, Tengku Nordayana Akma Tuan Kamaruddin, Nabilah Ramli, Mohd Firdaus Abdul Wahab, IIUM

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	14:35 - 14:55	<b>109</b>	Preparation of Anodic Active Materials Suitable for High-Rate Charge-Discharge by Pyrolysis of Poly(benzimidazole/amide) Copolymers	Battery Storage Technology	Kottisa Sumala Patnaik, Bharat Srimitra Mantripragada, Rajashekar Badam, Xianzhu Zhong, Tatsuo Kaneko, Noriyoshi Matsumi, JAIST
	14:55 - 15:15	<b>58</b>	Experimental Investigation on Photovoltaic Thermal System Performance with Different Attachment Techniques	Renewable and Sustainable Energy	Mukhamad Faeshol Umam, Md Hasanuzzaman, Nasrudin Abd Rahim, UMPEDAC
	15:15 - 15:35	<b>78</b>	Preliminary Theoretical Design of Crossflow Water Turbine for Rainwater Rooftop Harvesting System	Renewable and Sustainable Energy	M A Suhaime, E Mat Tokit, F A Z M Sa'at, M A M Rosli, S G Herawan, R Oktorina, O Setyandito, UTEM
	15:35 - 15:55	<b>59</b>	Effect of Etching Time on the Optical and Photoluminescent Properties of Colloidal 3C-SiC QDs	Renewable and Sustainable Energy	Olaoye Abdulmutolib Olajide, Sani Muhammad, Mohd Zamir Pakhuruddin, Md Roslan Hashim, Marzaini Rashid, USM