



**UPM**  
UNIVERSITI PUTRA MALAYSIA  
BERILMU BERBAKTI  
KAMPUS BINTULU SARAWAK



# Programme Book



**Green and Renewable Energy**

# GREEN

**International 2020  
e-Conference**

**18<sup>th</sup>-19<sup>th</sup> August 2020**  
**Webinar**

**“Current Status and Future  
of Renewable Energy”**

Organized by  
Universiti Putra Malaysia Bintulu Sarawak Campus

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#SDGUPM

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## Foreword by the Campus Director



Green and renewable energy are the significant attributes for Malaysia in reducing the global carbon emission to the environment. In-line with the United Nations Sustainable Development (SD) Goal no. 13 which highlights the needs of developing countries to both adapt to climate change and invest in low-carbon development, green and renewable energy not only promotes cleaner environment but also improves public health by reducing air and water pollution emitted by non-green energy resources.

This conference serves as a good platform for experienced as well as young researchers to share and explore related research work and innovations particularly in the field of green and renewable energy. The main focus of this conference is on four key areas of renewable energy, ranging from biomass, biogas and solid waste energy, solar and wind energy, hydro energy as well as alternative fuel (biodiesel and hydrogen). The well-diversified topics display that the theme of the conference “**Current Status and Future of Renewable Energy**” is very much reflected. The sharing session by keynote speakers renowned in their respective field, is yet another hallmark of this conference.

I would like to take this opportunity to congratulate the Organizing Committee of Green 2020 for their tremendous efforts in bring this international event to new heights. The fruitful engagement, debate and collaboration among the Government, NGOs, Industries, Universities and Research Institutes during the entire conference session is certainly an important element for promoting green and renewable energy both in Malaysia as well as in the international arena.

I wish you a very successful conference.

Thank you.

**Professor Dr Bujang B. K. Huat**  
**Campus Director**  
**Universiti Putra Malaysia Bintulu Sarawak Campus (UPMKB)**

## Foreword by the Conference Chair

**Dear Authors and esteemed readers,**

On the behalf of the organising committee, it gives me great pleasure to extend a warm welcome to all presenters and participants to the Green International Conference Webinar, August 18 - 19, 2020.

Due to the overwhelming response GREEN conference is extended to two days with presenters from England, Iraq, Japan, Nigeria, the Philippines, Singapore and our comrades from Peninsular Malaysia as well as Sabah and Sarawak; to spend two precious days on enlightening latest updates on green and renewable energy. Topics covered are Biomass and Solid Waste Energy, Solar and Wind Energy, Hydro and Tidal Energy, Alternative Fuel (Biodiesel and Hydrogen) and Policy and Social Needs.

The committee is also honoured to present four prominent keynote speakers namely Prof. Dato' Dr. Mohd Ali Hassan (Universiti Putra Malaysia) who speaks about current status and prospects of biomass, Mr. James Ung (CEO Sarawak Energy) who presents renewable hydropower- Catalyst for Growth, Dr. Ng Sing Muk (General Manager Research and Development Sarawak Energy) to share overview on renewables for distributed power solution and Prof. Ir. Dr. Nor Mariah Adam (Universiti Putra Malaysia) to share the potential of gas turbine using sheep fat biodiesel enhanced with plasmatron and fuel atomization using sonic waves atomiser.

We thank all authors and participants for their contributions.

**Professor Ir. Dr. Nor Mariah Adam**  
**Conference Chair**



## **ORGANISING COMMITTEE**

### **Advisor**

Professor Dr. Bujang B. K. Huat

### **Chairman**

Professor Ir. Dr. Nor Mariah Adam

### **Bursar**

Dr. Wong Tze Jin

### **Secretary**

Dr. Nurul Nadwa Zulkifli  
Mrs. Zahora Ismail

### **Head of Scientific and Technical:**

Biomass and Solid Waste	:	Dr. Nozieana Binti Khairuddin
Solar and Wind	:	Prof Ir. Dr. Nor Mariah Adam
Hydro and Tidal	:	Dr. Ellie Teo Yi Lih
	:	Assoc. Prof. Dr. Azmin Shakrine Mohd Rafie (Faculty of Engineering, UPM Serdang)
Alternative fuel	:	Dr. Sivasangar Seenivasagam
Policy and Social Needs	:	Dr. Ribka Alan

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Dr. Mark Lee Wun Fui  
Dr. Shafinah Binti Kamarudin  
Dr. Wan Nor Zanariah Binti Zainol@Abduliah  
Dr. Juniza Md Saad  
Dr. Wong Sie Chuong  
Mr. Woon Wai Cheong

### **Publication:**

Dr. Rosli Ismail  
Mr. Mohd Izhwan Muhamad (Faculty of Engineering, UPM Serdang)

### **Session Chairperson:**

Dr. Ellie Teo Yi Lih  
Dr. Wan Nor Zanariah Binti Zainol@Abduliah  
Dr. Shafinah Binti Kamarudin  
Professor Ir. Dr. Nor Mariah Adam

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Dr. Ellie Teo Yi Lih  
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Dr. Nor Hanifawati Binti Inai  
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Mr. Mohd Saufi Bin Mohammad Ramli  
Mr. Mohd. Shahrul Nizam Bin Ab. Jabar  
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Ms. Sakinah Binti Bujang  
Mr. Mohd. Zulkipli Saali  
Mr. Zulfikaruddin Saali  
Mrs. Gwendoline Ak Nelson  
Mrs. Daisy Pawie

## KEYNOTE SPEAKERS



**Prof. Dato' Dr. Mohd Ali Hassan**

Head of Project, Biomass Technology Centre

Ph.D., Okayama University, Japan

Expertise: Bioprocess Engineering; Environment Biotechnology;  
Management and Waste Management

Title: Current Status and Prospects of Biomass



**Mr. James Ung**

CEO of SEB Power Sarawak Energy

Title: Renewable Hydropower - Catalyst for Growth



**Dr. Ng Sing Muk**

General Manager for Research and Development Sarawak Energy

Title: An Overview on Renewables for Distributed Power Solution



**Professor Ir. Dr. Nor Mariah Adam**

Universiti Putra Malaysia Bintulu Sarawak Campus

Expertise: Thermofluids and Energy; Emergency Response and  
Planning.

Title: Potential of Gas Turbine using Sheep Fat Biodiesel Enhanced  
with Plasmatron and Fuel Atomization Using Sonic Waves

## PROGRAMME SCHEDULE

<b>Date</b>	<b>18 August 2020</b>
<b>Day-1</b>	<b>Webinar GREEN2020</b>
<b>Time</b>	<b>Description</b>
8.30 – 9.00 am	Online attendance for Day-1
9.00 – 9.25 am	Short welcoming speech by campus director/GREEN2020 director
9.30 – 9.55 am	Keynote speaker: Prof. Dato' Dr. Mohd Ali Hassan Affiliation: Universiti Putra Malaysia Title: Current status and prospects of biomass
10.00 – 10.25 am	Keynote speaker: Mr. James Ung Affiliation: CEO of SEB Power, Sarawak Energy Title: Advancing Renewable Hydropower for a Sustainable Energy Future
10.30 – 10.55 am	Keynote speaker: Dr. Ng Sing Muk Affiliation: GM for Research and Development, Sarawak Energy Title: An Overview on Renewables for Distributed Power Solution
11.00 – 11.25 am	Keynote speaker: Prof. Ir. Dr. Nor Mariah Binti Adam Affiliation: Universiti Putra Malaysia Kampus Bintulu Title: Potential of Gas Turbine Using Sheep Fat Biodiesel Enhanced with Plasmatron and Fuel Atomization Using Sonic Waves
11.30 – 11.45 am	Presenter 1: Ngu Wang Keat Affiliation: Future Nrg Sdn Bhd Title: Biogas Power Plant
11.45 – 12.00 pm	Presenter 2: Prof. Dr. Syed Nur Azman Bin Syed Mustaffa Affiliation: Manipal International University Title: Designing and Fabricating A Cost-Effective Solar Water Distiller for Palm Oil Mill Effluent Treatment
12.00 – 12.15 pm	Presenter 3: Dr. Bala Abdullahi Affiliation: Kano University of Science & Technology (Nigeria) Title: Optimum Truncation Level of Heat Pipe Based Compound Parabolic Collector
12.15 – 12.30 pm	Presenter 4: Dr. Hwei Voon Lee Affiliation: University of Malaya Title: Hydrodeoxygenation Of Bio Oil into Bio-Hydrocarbon Via Bimetallic-Based Catalyst



12.30 – 12.45 pm	<p>Presenter 5: Rhitankar Saha Roy</p> <p>Affiliation: Coventry University (United Kingdom)</p> <p>Title: Ansys Water-Wind Flow Simulation to Study Pressure Generated Under Various Conditions to Generate Electricity Using Piezoelectric Cells</p>
12.45 – 2.30 pm	Lunch Break
2.30 – 2.45 pm	<p>Presenter 6: Latifa Seniorita</p> <p>Affiliation: Kyoto University (Japan)</p> <p>Title: Development and Evaluation of Thermodynamic Models for Predicting Cold Flow Properties of Biodiesel</p>
2.45 – 3.00 pm	<p>Presenter 7: Assoc. Prof Dr Abu Saleh Ahmed</p> <p>Affiliation: Universiti Malaysia Sarawak</p> <p>Title: Biodiesel Production from Crude Karanja Oil Using Heterogenous Catalyst from Seashells</p>
3.00 – 3.15 pm	<p>Presenter 8: Lim Chong Lye</p> <p>Affiliation: PSB Academy (Singapore) &amp; UPM</p> <p>Title: Analysis of Optimum Thickness of Glass Wool Roof Thermal Insulation Performance</p>
3.15 – 3.30 pm	<p>Presenter 9: Faisal Sherwani</p> <p>Affiliation: Universiti Putra Malaysia</p> <p>Title: Mechanical and Morphological Properties of Different Natural Fiber Reinforced Polylactic Acid Composites: A Review</p>
3.30 – 3.45 pm	<p>Presenter 10: Nursyuhada' Binti Kamaruzaman</p> <p>Affiliation: Universiti Teknologi Malaysia</p> <p>Title: Waste-Energy-Climate Nexus Perspective Towards Circular Economy: A Review</p>
3.45 – 4.00 pm	<p>Presenter 11: Dr. Hasila Jarimi</p> <p>Affiliation: Universiti Kebangsaan Malaysia</p> <p>Title: An Affordable Calibrated Hot Box Suitable for Thermal Performance Measurement of An Insulation Panel</p>
4.00 – 4.15 pm	<p>Presenter 12: Dr. Muhammad Azwan Bin Sulaiman</p> <p>Affiliation: Universiti Teknologi MARA</p> <p>Title: The Impact of Green Areas Towards Property Values in Malaysia</p>
4.15 – 4.30 pm	<p>Presenter 13: Salma Izati Sinar Mashuri</p> <p>Affiliation: Universiti Teknologi MARA</p> <p>Title: Photocatalysis Degradation of Organic Pollutant Wastewater Under Led Light by ZnO/Cds</p>
4.30 – 4.45 pm	<p>Presenter 14: Dr. Siti Munirah Binti Mohd</p> <p>Affiliation: Universiti Sains Islam Malaysia</p>

	Title: Secondary School Students' Awareness of Green Computing: A Preliminary Study
4.45 – 5.00 pm	Presenter 15: Nurul Husna Binti Che Hamzah Affiliation: Universiti Putra Malaysia Kampus Bintulu Sarawak Title: Kitchen and Food Waste for Biogas Production: A Case Study in Bintulu, Sarawak
5.00 pm	End Day-1 Webinar GREEN2020

<b>Date</b>	<b>19 August 2020</b>
Day-2	Webinar GREEN2020
Time	Description
8.30 – 8.45 am	Online attendance for Day-2
8.45 – 9.00 am	Presenter 16: Assoc. Prof. Noumie Surugau Affiliation: Universiti Malaysia Sabah Title: Characteristics and Properties of Biofilms Made from Pure Carrageenan Powder and Whole Seaweed ( <i>Kappaphycus</i> Sp.)
9.00 – 9.15 am	Presenter 17: Aunie Afifah Abdul Mutalib Affiliation: Universiti Teknologi MARA Shah Alam Title: Sugarcane Bagasse Ash Impregnated with Cao As Heterogeneous Catalyst in Biodiesel Production
9.15 – 9.30 am	Presenter 18: Muhammad Amirrul Hakim Bin Lokman Nolahakim Affiliation: Universiti Teknologi Mara (Kampus Jengka) Title: Biodiesel Production Using K <sub>2</sub> CO <sub>3</sub> Catalyst Support Beads Al <sub>2</sub> O <sub>3</sub> Using Perforated Hydrophilic Materials (PHM)
9.30 – 9.45 am	Presenter 19: Nor Shafinaz Binti Azman Affiliation: Universiti Putra Malaysia Kampus Bintulu Sarawak Title: Food Premises' Awareness on Supporting the Production of Biodiesel from Used Cooking Oil in Bintulu Sarawak, Malaysia.
9.45 – 10.00 am	Presenter 20: Dr. Nurul Asikin Bt Mijan Affiliation: Universiti Kebangsaan Malaysia Title: Green Diesel Production Via Pyrolytic-Deoxygenation of <i>Jatropha Curcas</i> Oil Over Multi-Wall Carbon Nanotube-Based Catalysts

10.00 – 10.15 am	<p>Presenter 21: Alsultan Abdulkareem Ghassan</p> <p>Affiliation: Universiti Putra Malaysia</p> <p>Title: Thermal Catalytic Cracking of Waste Cooking Oil into Green-Diesel Via Activated Carbon Supported Cadmium and Lanthanum Oxides Catalyst</p>
10.15 – 10.30 am	<p>Presenter 22: Wan Nor Adira Wan Khalit</p> <p>Affiliation: Universiti Putra Malaysia</p> <p>Title: Green Fuel Production in Solvent-Free Catalytic Deoxygenation Using Bimetallic Nickel Based Catalyst Supported on Activated Carbon</p>
10.30 – 10.45 am	<p>Presenter 23: Adriana Kamaruddin</p> <p>Affiliation: Universiti Teknologi MARA</p> <p>Title: A Review on Green Cleaning During and Post COVID-19 pandemic</p>
10.45 – 11.00 am	<p>Presenter 24: Mohammad Sobri Bin Merais</p> <p>Affiliation: Universiti Putra Malaysia Kampus Bintulu</p> <p>Title: Potential of Cellulose Nanofiber from Banana Pseudostem For Solar Cell Application: A Preliminary Study</p>
11.00 – 11.15 am	<p>Presenter 25: Christopher H. Punzalan</p> <p>Affiliation: Philippine Normal University (Philippines)</p> <p>Title: Environmental and Green Energy Awareness of Rural and Urban Schools Students in The Philippines</p>
11.15 – 11.30 am	<p>Presenter 26: Izzaidah Binti Riman</p> <p>Affiliation: Universiti Teknologi MARA</p> <p>Title: Preparation and Characterization of Metal Oxide Biochar Catalyst for Efficient Oxidative Desulfurization</p>
11.30 – 11.45 pm	<p>Presenter 27: Dr. Mohammad Faisal Mohd Basir</p> <p>Affiliation: Universiti Teknologi Malaysia</p> <p>Title: Dual Solutions for An Unsteady Hybrid Nanofluid Thin Film Second-Grade Flow with Heat Transfer Analysis Over Permeable Stretching Sheet</p>
11.45 – 12.00 pm	<p>Presenter 28: Shamina A Aleem</p> <p>Affiliation: Universiti Putra Malaysia</p> <p>Title: In-Situ Ketonization And Decarboxylation of Fatty Acid Over A Series of Transition Metal Oxide Supported Zirconia Oxide Catalyst</p>
12.00 – 12.15 pm	<p>Presenter 29: Vinothini Apoo</p> <p>Affiliation: Multimedia University</p> <p>Title: Influence of Green Human Resource Management on Employee Engagement</p>
12.15 – 12.30 pm	<p>Presenter 30: Thong Cheng Han</p> <p>Affiliation: University of Malaya</p>

	Title: Growth of Marine Microalgae and their Potential Application in Algal Biophotovoltaic (BPV) Devices
12.30 – 12.45 pm	Presenter 31: Dr. Osam H. Attia Affiliation: University of Baghdad, Iraq Title: Numerical analysis for solar panel subjected to an external force to overcome adhesive force in desert areas
12.45 – 2.30 pm	Lunch Break
2.30 – 2.45 pm	Presenter 32: Melissa Sharmah Bte Gilbert @ Jesuet Affiliation: Universiti Malaysia Sabah Title: Bio-briquette Blend from Newspaper-based Nitrocellulose and Neolamarckia cadamba
2.45 – 3.00 pm	Presenter 33: Dr. Kai Wah Cheng Affiliation: Universiti Putra Malaysia Title: Towards a better understanding of the determinants of households' intention to practise solid waste segregation-at-source: Developing a theoretical framework
3.00 – 3.15 pm	Presenter 34: Dr. Kai Wah Cheng Affiliation: Universiti Putra Malaysia Title: Exploring the relationship between determinants of households' intention to practise solid waste segregation-at-source: A conceptual paper
3.15 – 3.30 pm	Presenter 35: Dayang Nur Sakinah Binti Musa Affiliation: Universiti Malaysia Sabah Title: Wood-based biomass of Dipterocarp and Non- Dipterocarp Trees as an Alternative for Biofuel
3.30 – 3.45 pm	Presenter 36: Dr. Mohd Sufri Mastuli Affiliation: Universiti Teknologi MARA Title: Self-propagating combustion method for sulfonated SnO <sub>2</sub> catalyst for esterification of low-cost PFAD feedstock into biodiesel
3.45 – 4.00 pm	Presenter 37: Yoganathan Palaniandy Affiliation: Universiti Putra Malaysia Kampus Bintulu Title: Potential of steam recovery from excess steam in sterilizer at palm oil mill
4.00 – 4.15 pm	Presenter 38: Dr. Ng Khai Mun Affiliation: Infrastructure University Kuala Lumpur (IUKL) Title: Preliminary Experimental Study of Passive Solar Air Heating System in Drying Chilli under Malaysian Climates
4.15 – 4.25 pm	Presenter 39: Nurjehan Ezzatul Binti Ahmad Affiliation: International Islamic University Malaysia Title: Development of PSA technology for CO <sub>2</sub> capturing from biogas

4.25 – 4.35 pm	Presenter 40: Dr. Melvin Mojikon Affiliation: Politeknik Kota Kinabalu Title: Avanong Food Pack Using Green Technology
4.35 – 4.45 pm	Presenter 41: Dr. Mohd Zulkhairi Mohd Yusoff Affiliation: Universiti Putra Malaysia Title: Utilisation of Waste Glycerine for Biohydrogen Production Using Engineered Escherichia coli BW25113
4.45 – 5.00 pm	Presenter 42: Dr. Michael Ohakwere-Eze Coat Affiliation: Federal University of Kashere Title: Experimental Estimation of Water Velocity in A Selected Unregulated River (River Dindima) For Micro-Hydrokinetic Potential.
5.00 – 5.15 pm	Presenter 43: Dr. Michael Ohakwere-Eze Coat Affiliation: Federal University of Kashere Title: Prospect Evaluation of a Wind Farm Project for A Smart Campus in The Federal University of Kashere, Gombe State
5.15 – 5.30 pm	Presenter 44: Dr. Omar Faruqi Bin Marzuki Affiliation: Universiti Putra Malaysia Bintulu Sarawak Campus Title: Level of Awareness and Perception of Rural Society Related to Renewable Energy in Sarawak: A Preliminary Study
5.30 pm	End Day-2 Webinar GREEN2020