

Welcome to the first edition of the Institute of Energy Policy and Research (IEPRe) Newsletter which covers news and updates for the months Jan to March 2021. Please do keep in touch with us at IEPRe@uniten.edu.my.

Highlights

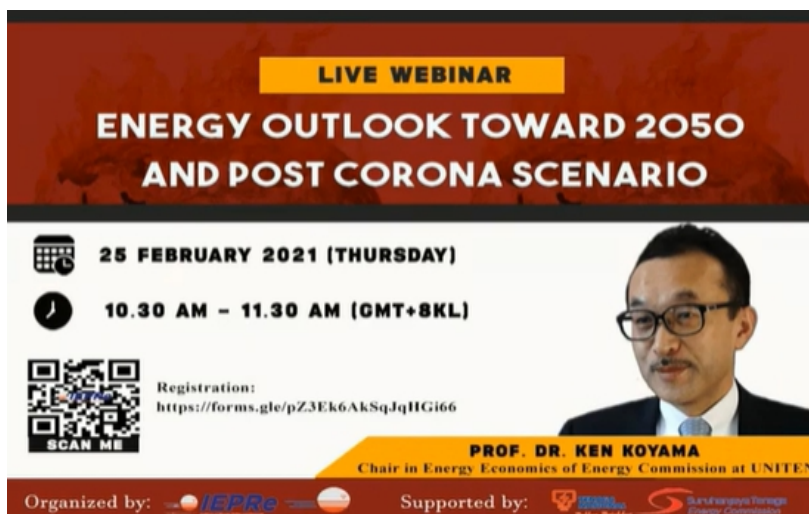
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LIVE WEBINAR



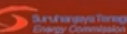
**ENERGY OUTLOOK TOWARD 2050
AND POST CORONA SCENARIO**

25 FEBRUARY 2021 (THURSDAY)

10.30 AM - 11.30 AM (GMT+8KL)

Registration:
<https://forms.gle/pZJEk6AkSqJqHG166>

PROF. DR. KEN KOYAMA
Chair in Energy Economics of Energy Commission at UNITEN

Organized by:  Supported by:  

By Dr Norsyahida Mohammad

Thursday, 25th February 2021 – A live webinar was conducted by IEPRe featuring Prof. Dr. Ken Koyama, the Chair of Energy Economics of Energy Commission at Universiti Tenaga Nasional. The one-hour webinar was the first webinar series in 2021 and the third Talk Series conducted online via the Microsoft Teams' Live Event platform since the beginning of the COVID-19 pandemic in Mar 2020. The webinar was moderated by the Head of Unit, Program and Short Course of IEPRe, Dr. Muhammad Khairul Islam.

Energy Outlook Towards 2050 and Post Corona

“The webinar emphasized the need to address carbon neutrality and energy security issues, as well as focusing on advanced technology development including deployment of hydrogen, renewable energy, and zero-emissions vehicles (ZEV).”

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SAVE THE ENERGY
SAVE THE WORLD

Prof. Dr. Ken Koyama presented the view of the world's energy future according to the Institute of Energy Economics Japan (IEEJ) Outlook 2021. The energy outlook presented was based on the reference scenario and future, and advanced a technology scenario which involves the maximum introduction of energy-related technologies. The outlook also focuses on the post-corona world transformation scenario.

The speaker reiterated that the COVID-19 pandemic has caused a transformation in politics, the economy and society worldwide. The 4D Challenges (decarbonization, deregulation, digitalization and decentralization) in the electricity sector were discussed during the webinar. Digitalization challenges the electricity sector as electricity demand surges to cater for the digital society, while the electricity sector needs to accommodate decentralization of the electricity systems. The webinar saw the gathering of 87 attendees from various fields including academicians and representatives from public agencies and energy industries.

The Impact of COVID-19 on Household Electrical Appliances

By Dr Siti Indati Mustapa

The implementation of the Movement Control Order (MCO) due to the COVID-19 pandemic has influenced household energy consumption patterns. By employing a household online survey and statistical analyses, the impact of MCO on the consumption patterns of 29 electrical appliances used in the residential sector, and the shift towards energy-saving appliances in Malaysia were investigated for before, during and after the MCO from 18 March to 9 June 2020. About 1482 survey samples across the geographic regions in Malaysia were analyzed. The 6-month project was supported by the Ministry of Higher Education of Malaysia under the Special Research Grant Post COVID-19 and was completed on 31st Jan 2021.



The findings of the study revealed that the consumption levels of appliances were significantly greater during the MCO compared to before and after the MCO. The pattern is consistent across almost all electrical appliances. Exceptions were observed in the consumption level of the “getting ready appliances” i.e., clothes irons.

“The introduced reliefs and initiatives to mitigate the increase in household electric bills by the Government and Tenaga Nasional Berhad did little to inspire energy saving behaviours. The consumption of electrical appliances pattern was evidenced only to increase during-the-MCO and the consumption pattern continued after-the-MCO was lifted”

The B40, M40 and T20 reacted differently to energy behaviours measured in Purchasing Behaviour (PB), Money Saving (MS), Social Context (SC) and Environmental Conscience (EC). The study showed that appreciation of the Energy Efficient Star Labelling (EESL) strongly influenced the energy behaviours of the B40. However, appreciation of the EESL did not influence the energy behaviours of the M40 and T20 as much as the B40 respondents.

The study showed that the effect of energy-efficient awareness, represented by the EESL, was least observed among higher-income respondents. The findings aligned with the claim that Malaysians’ energy-saving behaviours are caused by cost savings and financial backgrounds rather than environmental concerns.



The study highlights the following recommendations to stimulate energy efficiency improvements in Malaysia:

- (1) Introducing more 5-star rated appliances in the market would lead to a positive new normal to widespread efficiency improvement in Malaysia.
- (2) Encourage more stimulus programs such as the SAVE 2.0 program for buying energy-efficient appliances through an e-commerce platform.
- (3) A targeted campaign directed at household residents should be provided with energy conservation guides to conserve energy and save money at home through online advertisements, smartphone apps and social media.
- (4) Well-designed energy efficiency labels that can reduce the complexity of information would aid consumer understanding, regardless of their level of educational background and encourage the purchasing of good quality energy rating products.
- (5) The wide implementation of smart meters allows for a comprehensive and flexible approach to facilitating household learning and decisions to increase environmental actions thus enabling households to self-manage their energy consumption and become more energy efficient. This could also be aided by complementary services or products (i.e., new billing options, communication protocols, etc.).

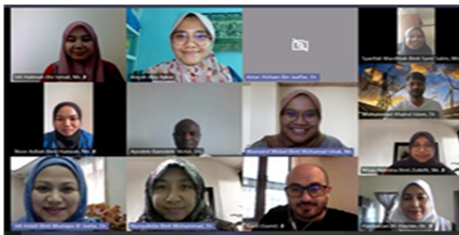
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How do you get your paper accepted in a High Impact Journal?

By Waznatol Widad Mohd Ishak

Friday, 29th January 2021 – To kick start the year, a sharing session was conducted featuring our post-doctoral researcher, Dr. Ayodele Bamidele Victor. In 2020, Dr. Ayodele Bamidele Victor was awarded the iRMC Award for the Highest Number of Q1/Q2 Publications.



The one-hour sharing session managed to give insights to our researchers on how to effectively produce a manuscript for publication in high-impact journals. The speaker reiterated the importance of having a good research collaboration and networking with academics in other institution to improve our publications.

So how can you make sure you write the best paper possible? Here are our top 9 tips for great academic writing:

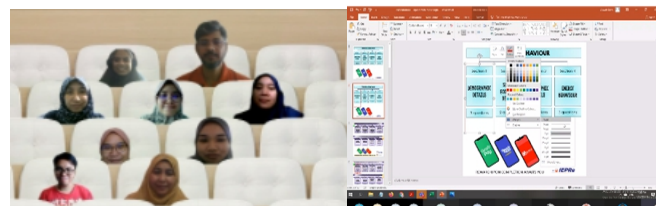
- ✓ *Read the journal guideline meticulously*
- ✓ *Plan your manuscript*
- ✓ *Make your manuscript publication worthy*
- ✓ *Write a memorable title*
- ✓ *Write an effective abstract*
- ✓ *Get feedback from colleagues who work in the same field*
- ✓ *Double-check references*
- ✓ *Polish the language*
- ✓ *Add the bells and whistles in writing*

How to create a good survey form online?

Monday, 15 February 2021 – The second sharing session entitled 'Developing a Good Surveys and Analysis' was conducted by our post-doctoral researcher, Dr. Aisyah Abu Bakar. The speaker demonstrated survey design using Google Forms and shared her tips on producing artworks in Canva. The sharing session aimed to guide IEPRe researchers to construct a presentable survey to enhance the participation of targeted respondents via online and offline formats.

Here are some tips on how to write a good survey form:

- ✓ *Have a goal in mind*
- ✓ *Make answer choices clear and distinct*
- ✓ *Keep the questions simple and avoid jargon*
- ✓ *Give users options and provide open-ended responses that can give you more context*
- ✓ *Use skip logic when applicable*
- ✓ *Add media or images to provide helpful context*
- ✓ *Always keep the audience in mind*



Congratulation Dr. Victor!

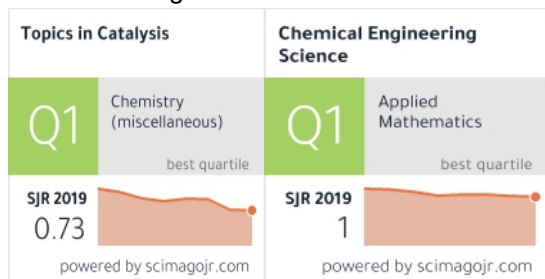
We would like to congratulate our post-doctoral Dr Victor on the excellent achievement of the highest number of Q1/Q2 Journals (as 1st or 2nd author) in the year 2020. Congratulations on reaching the publication performance goal. Thank you for setting your sights high and making every effort to achieve it.

Best wishes for your continued success.

Publications

By Dr Ayodele Bamidele Victor

Congratulations to all our Researchers and their teams for getting their work published in prestigious SCIE Journals in the first quarter of 2021. Dr. Ayodele and his team got their research work, which focused on the modeling of hydrogen production, CO₂ capture, degradation of organic pollutant, and CO₂ hydrogenation to light olefins, published in the following Journals:

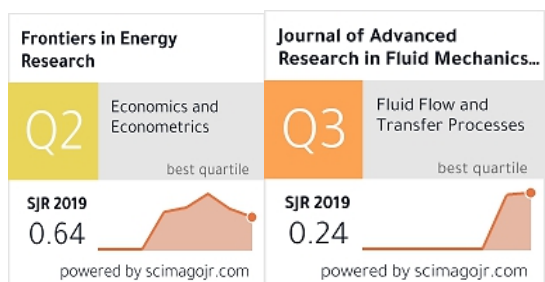


Modeling the prediction of hydrogen production by co-gasification of plastic and rubber wastes using machine learning algorithms

This study aimed to investigate the application of radial basis function (RBF) and multilayer perceptron (MLP) artificial neural networks for modeling hydrogen production by co-gasification of rubber and plastic wastes. Both the RBF and MLP neural networks were configured by determining the best-hidden neurons that could offer optimized performance. Based on the best-hidden neurons, a model architecture of 4-16-1, 4-20-1, 4-17-1, and 4-3-1 was obtained for RBF (with standard activation function), RBF (with ordinary activation function), one-layer MLP, and two-layer MLP, respectively, indicating the number of input nodes, the hidden neurons, and the output nodes.



The predicted hydrogen production from the co-gasification closely agrees with the observed values. The 1-layer MLP with R^2 of .990 displayed the best performance with all the input parameters having a significant influence on 9 the model output. The neural network algorithm obtained in this study could be implemented in the eventuality of making a vital decision in the process operation of the co-gasification process for hydrogen production.



Citation: Ayodele, BV, Mustapa, SI, Kanthasamy, R, Zwawi, M, Cheng, CK. Modeling the prediction of hydrogen production by co-gasification of plastic and rubber wastes using machine learning algorithms. *Int J Energy Res.* 2021; 1– 15. <https://doi.org/10.1002/er.6483>

Dr. Amar and his team also got their conceptual framework on intellectual human capital, corporate social innovation and sustainable development published in the following Journal:



Intellectual human capital, corporate social innovation and sustainable development: a conceptual framework

Corporate social innovation (CSI) is an emerging concept that is fundamental for 21st-century businesses. Human capital plays a vital role in firms that seek to pursue CSI goals. This study introduces a management control system as an approach to achieve strong sustainability in business and society through CSI. This paper seeks to examine the role of intellectual human capital in CSI. The paper finds that CSI has distinctive corporate research and development activities that can be applied to complex sustainability issues.

Citation: Amran A., Yon, L.C, Kiumarsi S., Jaaffar A. H.(2021) Intellectual human capital, corporate social innovation and sustainable development: a conceptual framework. *International Journal of Innovation and Sustainable Development*. Inderscience Publishers (IEL).

The paper reveals that the sustainability of business and society is dependent on factors of intellectual human capital. The theoretical findings reveal that the nexus between intellectual human capital, CSI and the sustainability of business and society can be explained within the assumptions of the theory of the resource-based view (RBV). This paper offers an in-depth review of the relationship between sustainability-related intellectual human capital and CSI.

Welcome to IEPR



We are thrilled to have Mohd Danial Samsudin from the first cohort of the Bachelor in Energy Economics (Energy) program on board for an internship in 15th February 2021. We hope the internship with us will help you to gain valuable work and research experience and help us create the future human capacity in energy fields.

Our Best Prayers for Continuous Success



Assoc. Prof Dr Noriza Mohd Saad began her work with IEPR on 1st Jan 2019 and has worked as the Head of the Research and Consultancy Unit. She contributed to the Institute through her active participation in securing and monitoring research projects related to energy economics and finance. IEPR extends our huge gratitude and appreciation for her total commitment to leading research projects. We wish her all the best in her new placement in UiTM Machang.

Come and join us!

IEPR has been organizing a series of webinars on contemporary topics by prominent experts in the field of energy economics and policies. All webinars are offered at no cost. Sign-up to join our mailing list for more info on our upcoming events.



Get yourself vaccinated



More info at:

<https://www.vaksincovid.gov.my/>

The Institute of Energy Policy and Research (IEPR) was established on 11th August 2009 as part of the Universiti Tenaga Nasional's Strategic Transformation initiative to spearhead research and consultancy activities related to energy economics.

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