

Foreword

Welcome to the second issue of 2024 for the *Pertanika Journal of Science and Technology (PJST)*!

PJST is an open-access journal for studies in Science and Technology published by Universiti Putra Malaysia Press. It is independently owned and managed by the university for the benefit of the world-wide science community.

This issue contains 25 articles; six review articles and the rest are regular articles. The authors of these articles come from different countries namely Brazil, India, Indonesia, Iraq, Kingdom of Saudi Arabia and Malaysia.

Marco Pereira de Souza et al. presented an article titled “A comparison of results from two multi-criteria decision-making methods for solar photovoltaic plant site location: Case study Rio De Janeiro” from Brazil. Their study compares the results of two studies on the optimal site selection of PV in the Brazilian state of Rio de Janeiro. This comparison was carried out by map analysis and applying different correlation coefficients. The map comparison showed a high similarity of results; 83% of the best sites were identical in studies 01 and 02. It is relevant because the intersections of this study show great potential for PV plants as different methods validated them. The four coefficients used had a very high degree of correlation, with all of them above 0.9. Thus, the consistency of all the ranks also validates the results of both studies since they gave similar results, although they were tested in different ways. Therefore, the consistency of the results of the analysed studies indicates the potential for installing photovoltaic solar power plants in Rio de Janeiro and validates the methods used and the results themselves. The detailed information of this study is available on page 551.

Another article we wish to highlight is “Integrating Fuzzy Logic and Brute Force Algorithm in Optimizing Energy Management Systems for Battery Electric Vehicles” by Abdulhadi Abdulsalam Abulifa and colleagues from Universiti Putra Malaysia, Malaysia. This research proposes a solution to achieve more efficient control of heating, ventilation, and air conditioning consumption by integrating fuzzy logic techniques with brute-force algorithms to optimise the energy management system in battery electric vehicles. The model was based on actual parameters, implemented using MATLAB-Simulink and ADVISOR software, and configured using a backwards-facing design incorporating the technical specifications of a Malaysian electric car, the PROTON IRIZ. An optimal solution was proposed based on the Satisfaction ratio and state of charge metrics to achieve the best system optimisation. The results demonstrate that the optimised fuzzy energy management system improved power consumption by 23.2% to 26.6% compared to a basic fuzzy energy management system. Further details of the investigation can be found on page 797.

The next article uses the Coats Redfern model-free method to investigate the thermal decomposition and combustion analysis of Malaysian peat soil samples. The sample analyses include virgin peat from a forest reserve and agricultural peat from a cultivated area. Virgin peat experiences a 43% mass loss during pyrolysis, while agricultural peat shows a 46% mass loss, emphasising insights into thermal behaviour and consistent decomposition patterns across peat types. Furthermore, the study determines average activation energy trends, measuring 14.87 kJ/mol for virgin peat and 5.37 kJ/mol for agricultural peat under an inert atmosphere, and 28.89 kJ/mol for virgin peat and 36.66 kJ/mol for agricultural peat under an oxidative atmosphere. The study underscores the higher flammability of virgin peat due to its elevated carbon content, impacting ignition points and decomposition rates, emphasising the need for tailored management strategies based on peat type to mitigate fire risks. Details of this study are available on page 839.

We anticipate that you will find the evidence presented in this issue to be intriguing, thought-provoking and useful in reaching new milestones in your own research. Please recommend the journal to your colleagues and students to make this endeavour meaningful.

All the papers published in this edition underwent Pertanika's stringent peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure that the quality of the papers justified the high ranking of the journal, which is renowned as a heavily-cited journal not only by authors and researchers in Malaysia but by those in other countries around the world as well.

We would also like to express our gratitude to all the contributors, namely the authors, reviewers, Editor-in-Chief and Editorial Board Members of PJST, who have made this issue possible.

PJST is currently accepting manuscripts for upcoming issues based on original qualitative or quantitative research that opens new areas of inquiry and investigation.

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