

Foreword

Welcome to the fourth issue of 2021 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 49 articles; two case studies, four review articles, and the rest are regular articles. The authors of these articles come from different countries namely India, Indonesia, Iran, Iraq, Japan, Malaysia, Nigeria, Pakistan, Russia, Saudi Arabia, Sweden, Thailand, and UK.

A regular article titled “A deep learning approach for retinal image feature extraction” was written by Mohammed Enamul Hoque and co-researchers from Universiti Malaysia Sarawak. This study proposes a retinal image feature, true vessel segments extraction approach exploiting the Faster Retinal Convolutional Neural Network. The fundamental Image Processing principles have been employed for pre-processing the retinal image data. A combined database assembling image data from different publicly available databases have been used to train, test, and evaluate this proposed method. This proposed method has obtained 92.81% sensitivity and 63.34 positive predictive value in extracting true vessel segments from the top first tier of colour retinal images. It is expected to integrate this method into ophthalmic diagnostic tools with further evaluation and validation by analysing the performance. Detailed information on this study can be found on page 2543.

The following article is on analytical and numerical investigations of mechanical vibration in the vertical direction of a human body in a driving vehicle using a biomechanical vibration model. In this study, analytical and numerical solutions for the dynamic biomechanical vibration model have been presented in detail to investigate and analyse the dynamic response of a human body when seated in a driving vehicle. The first simulation was an analytical solution by deriving the general equations of the motion of the vibration behaviour for the human body to calculate the natural frequency for individual parts. The second simulation was a finite element technique to calculate natural frequency and vibration modes for the human body under different frequency loads. The simulation results show that the mechanical response expected and predicted to respond to the human body is perfect using this biomechanical model in a vibratory environment as in a vehicle driving, which will help stimulate the quality and design of vibration insulator such as a seat. Complete information on this study is presented on page 2791.

Another article that we wish to highlight is “Failure rate estimation for transformer population based on health index through Markov model approach” by Nor Shafiqin Shariffuddin et al. from Malaysia. The condition parameters data extracted from 3,192 oil samples were analysed in this study. The samples were from 370 transformers with an age range between 1 and 25 years. Based on the Markov model prediction, the failure rate of the transformer population increases as the transformer’s age increases, and it begins to exceed the global average failure rates at 14 years. Overall, the Markov model can be considered a viable approach to predict transformer failure rates, and it can be used as an alternative option to determine the forecasted failure data. Detailed information on this study is presented on page 3029.

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.

In the last 12 months, of all the manuscripts peer-reviewed, 36% were accepted. This seems to be the trend in PJST.

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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