Foreword

Welcome to the fifth issue of 2026 of 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: three review articles; and the rest are regular articles. The authors of these articles come from different countries namely India, Indonesia, Iraq, Japan, Malaysia, Philippines, Qatar, South Korea, United Kingdom, and the United States of America.

The article titled "Pneumonia Screening and Prediction on Images using a Convolutional Neural Network Deep Learning Model" investigates the application of deep learning to support pneumonia screening by automating the classification of chest radiographs. The study compares two pretrained convolutional neural network architectures, VGG16 and Inception-v3, using a publicly available dataset comprising 5,216 training images and 624 independent test images classified as normal or pneumonia. Both extraction and fine-tuning approaches were evaluated under consistent testing conditions to assess their performance. The findings demonstrate that the fine-tuned Inception-v3 model achieved the strongest overall performance, with an accuracy of 93.6%, sensitivity of 95.1%, specificity of 91.0%, and an F1-score of 94.9%, while requiring approximately 60% of the training time per epoch of VGG16. The study also emphasises the importance of reporting performance on independent test data rather than relying on training-phase results, thereby encouraging more reliable assessment of medical image classification systems. By demonstrating the potential of transfer learning for chest radiograph analysis, this research contributes to the development of computer-assisted screening tools, particularly in healthcare settings where access to specialist radiological expertise may be limited. Full details of this study are available on page 2569.

Another noteworthy contribution is the article entitled "Time-dependent Polyethene Terephthalate (PET) Biodegradation by *Aspergillus niger* and *Aspergillus oryzae* under Solid State Fermentation", which addresses the environmental challenge of persistent plastic waste through fungal-mediated biodegradation. The study examines the ability of *Aspergillus niger* and *Aspergillus oryzae* to modify and reduce polyethene terephthalate (PET) under solid-state fermentation conditions over a ten-week period. PET samples

obtained from mineral water bottles were assessed through weight-loss measurements, xylanase activity, Fourier-transform infrared spectroscopy, and scanning electron microscopy to evaluate enzymatic activity and changes in polymer structure and surface morphology. The results show that *A. oryzae* produced the greatest PET weight reduction of 1.91% at week four, accompanied by xylanase activity of 467.8 U/mL, whereas *A. niger* exhibited a higher peak xylanase activity of 641.9 U/mL at week two but a lower maximum PET weight reduction of 0.76%. The analyses also revealed chemical and surface changes following fungal treatment, indicating the potential for biological modification of PET. Although the observed mass reductions were modest, the findings provide useful insights into the time-dependent behaviour of the two fungal species and support further investigation of low-cost, biologically based strategies for plastic-waste management. Further details of this study can be found on page 2791.

The issue also features the article titled "Regenerative Braking-Based Energy Recovery for Electric Motorcycles in Hilly Terrain", which presents an energy-management approach to improving the efficiency of electric motorcycles operating on roads with varying gradients. The research develops a MATLAB/Simulink model that incorporates vehicle dynamics, road-gradient effects, an electric drive system, a lithium-ion battery, and feedforward and proportional–integral–derivative (PID) control strategies. Using the Worldwide Motorcycle Test Cycle as a reference speed profile, the study evaluates speed tracking, regenerative braking behaviour, energy recovery, and changes in battery state of charge. The findings demonstrate that the PID-controlled system improved the simulated braking response compared with feedforward control, reducing the root-mean-square error from 14.10 m/s to 11.546 m/s. Recovered energy increased from 1.00×10^5 J to 2.20×10^5 J, while the battery state-of-charge variation improved from −13.0% to −10.2%. The simulation further confirmed that downhill braking enabled the electric machine to operate as a generator, returning part of the vehicle's mechanical energy to the battery. By highlighting the effectiveness of regenerative braking and appropriate control strategies in hilly driving conditions, this work advances energy-efficient electric mobility and more sustainable transportation technologies. The study's full contents are available on page 2739.

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 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.

Editor-in-Chief
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