Foreword

Welcome to the fifth issue of 2025 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 15 articles: four review articles; and the rest are regular articles. The authors of these articles come from different countries namely France, Indonesia, Malaysia, Morocco, Pakistan, Saudi Arabia and Spain.

Aseil Nadhim Kadhim and her teammates from Universiti Teknologi Malaysia Kuala Lumpur evaluated the gender classification ability of the You Only Look Once (YOLO) algorithm using deep learning. YOLO is one of the most accurate object detection models that can identify multiple objects in a video or image in real-time. In this study, various versions of YOLO (YOLOv3 to YOLOv9) were compared to find the most accurate and efficient model for gender classification. The research used a collection of 361 test images of male and female subjects in different scenarios, and the models' performance was measured using key metrics such as Precision, Recall, and F1-score. The results indicated that YOLOv9 was the most accurate (mAP = 97%) and precise (86.8%), making it the most effective for real-time applications. Despite its advancements, YOLOv9 still faces high computational demands and occasional misclassification in complex situations. More detailed information about this study is available on the page 2155.

A regular article titled "Screening and Isolation of Microalgae Collected from Tin Mining at Bangka Belitung Province with Remarks on Their UV-C Absorbance and Lead Remediation" examined the effect of growth media on microalgae isolated from water bodies at abandoned tin mining sites. The study also analyzed their sensitivity to UV-C spectrum and lead resistance. Samples from six locations were enriched in Bold Basal Medium (BBM) (pH 6.8) and Blue Green-11 (BG-11) (pH 7.4) media. They were maintained at 21°C and exposed to continuous light at 1,600 lux. The UV-C sensitivity of the cultures was measured using spectrophotometry at λ=230 nm, followed by growth rate assessment. The isolates were tested with lead concentrations of 0, 10, 100, and 200 ppm. The microalgae showed various absorbance peaks, indicating their ability to grow under UV-C wavelengths. Lead exposure affected the cell size, organelles, and growth of the microalgae. The different absorbance peaks suggest that the microalgae may produce beneficial metabolites as an adaptive response to harsh environments. Additional details of this study are available on page 2177.

A selected article titled "Volatile and Non-volatile Metabolites Profiling of the Chloroform Extract of Marine Sponge Clathria reinwardti via Mass Spectrometry" analyzed the metabolites in the chloroform extract of the marine sponge C. reinwardti using mass spectrometry. A sponge sample was collected from the east coast of Sulug Island, Sabah, Malaysia. Total phenolic and flavonoid contents were measured. The composition of these extracts was further examined through qualitative biochemical screening, Fourier transform infrared spectroscopy (FTIR), gas chromatography-mass spectrometry (GC-MS), and liquid chromatography-quadrupole time-of-flight mass spectrometry (LT-qTOF-MS) analyses. GC-MS analysis revealed various metabolites, including 2,5-bis(1,1-dimethylethyl) phenol, pentadecane, eicosane, tetracosane, and cholestanol, among others. LC-qTOF-MS analysis identified additional metabolites like thymine, hexadecasphinganine, hericene B, phylloquinone, 24-norcholesterol, palmitic amide, oleamide, solanidine, suillin, 9-thiastearic acid, and isoamijiol. These compounds are associated with various pharmacological activities, such as anti-inflammatory, antimicrobial, anti-diabetic, anticancer, antioxidant, anti-hemorrhagic, cytotoxic, neuroprotective, and chemopreventive effects. Therefore, the chloroform extract of C. reinwardti is a valuable source of metabolites. Complete information about this study is presented on the page 2279.

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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