

Foreword

Welcome to the sixth 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 20 articles: one case study article; six review articles; and the rest are regular articles. The authors of these articles come from different countries namely Afghanistan, China, Colombia, India, Indonesia, Malaysia, Nigeria, South Africa and United States.

A selected article titled “Extraction and Characterization of Natural Fibers from *Pennisetum purpureum*: Influence of Harvesting Age on Chemical, Mechanical, and Thermal Properties” examined new bio-based, natural cellulosic fibers from the *P. purpureum* plant, determining the optimal harvesting age at 30, 45, and 60 days. These fibers were subsequently analyzed to evaluate their physical, mechanical, thermal, and chemical properties. The relatively low density suggests that *P. purpureum* fibers could be advantageous in producing lightweight composite materials. The fiber of *P. purpureum* showed significant changes in chemical composition with increasing harvesting age. The mechanical properties of *P. purpureum* fibers were not solely dependent on cellulose content but were greatly influenced by the balance and interaction between cellulose and lignin. The results indicated that *P. purpureum* fiber has strong potential as a reinforcing material for thermoplastic green composites. Further detailed information can be found on page 2465.

The regular article entitled “Harnessing Co-Culture of Hydrolase-Producing *Bacillus* spp. to Boost Kitchen Waste Biodegradation” investigates the use of hydrolase-producing bacteria (HPB) co-cultures to enhance the biodegradation of kitchen waste (KW). The screening of 26 bacterial strains from fermented vegetables, agricultural soils, and in-house glycerol stock collections revealed *Bacillus licheniformis* 2D55 and *Bacillus xiamenensis* Y7 as standout candidates, exhibiting multiple hydrolase activities, including amylase, protease, lipase, and cellulase. In co-culture fermentation, these strains demonstrated superior hydrolase activities, microbial count, percentage of biodegraded total solids, and gross degradation rate during solid-state fermentation compared to monocultures and controls. These findings underscore the potential of HPB co-cultures as an effective

strategy to improve KW biodegradation, contributing to sustainable organic waste management solutions. Further details of this study can be found on page 2491.

Jorge Arturo Moreno Cascante and his teammates from the Pedagogical and Technological University of Colombia focused on the performance of pervaporation membranes, primarily polydimethylsiloxane-based membranes, for the separation of alcohols from fermentation broths. Additionally, the effects of composition and temperature are evaluated. Factors influencing process efficiency are also analyzed, and emerging technologies, new bacterial strains, and biomass sources are highlighted as strategies to enhance alcohol fuel production. The results showed that pervaporation has significantly improved biofuel production. Full details of this study are available on page 2565.

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

Luqman Chuah Abdullah