

Foreword

Welcome to the third issue of 2023 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; two review articles and the rest are regular articles. The authors of these articles come from different countries namely China, Egypt, Indonesia, Iraq, Japan, Libyan, Malaysia, Nigeria, Russia Federation, Saudi Arabia, United Arab Emirates and Vietnam.

Norshafira Syazwani Abu Hasan et al. from Universiti Malaysia Pahang and International Islamic University Malaysia evaluated the *ex-situ* development and characterization of a composite film based on bacterial cellulose derived from oil palm frond juice and chitosan as potential food packaging. They successfully produced bacterial cellulose-chitosan (BCC) film composites to reduce the environmental harm caused by synthetic plastic packaging materials. BCC films were prepared via the *ex-situ* method involving immersion of bacterial cellulose (BC) derived from the static cultivation of *Acetobacter xylinum* in oil palm frond juice in various concentrations of chitosan solution. The Attenuated Total Reflection Fourier-Transform Infrared and Field Emission Scanning Electron Microscopy results confirm the successful incorporation of chitosan into the BC. Further details of the article are available on page 1173.

A regular article titled “Highly Conductive Graphenated-Carbon Nanotubes Sheet with Graphene Foliates for Counter Electrode Application in Dye-Sensitized Solar Cells” was written by Yusnita Yusuf and co-researchers from Malaysia, Japan, and China. Their research successfully synthesized graphenated-carbon nanotube sheets (g-CNT) and carbon nanotube sheets (CNT) via the floating-catalyst chemical vapor deposition method. The morphology structure of the g-CNT sheet revealed foliates growing out from the sidewalls of multi-walled CNT. The g-CNT6 showed more stability than the g-CNT8 and CNT10. High conductivity was obtained for the sample g-CNT8 (34.5 S/cm) compared to the sample g-CNT6 (11.2 S/cm) and CNT10 (4.76 S/cm). The hybrid structure of the g-CNT sheet creates efficient charge transfer in the materials resulting in higher conductivity. Thus, the g-CNT sheet, especially g-CNT8, can potentially substitute platinum as the conventional CE in the dye-sensitized solar cell. Detailed information on this study can be found on page 1325.

Another article we wish to highlight is “Discovery of *Mycobacterium tuberculosis* CYP121 New Inhibitor via Structure-based Drug Repurposing” by Tarek El Moudaka, Priya Murugan, Mohd Basyaruddin Abdul Rahman, and Bimo Ario Tejo from UCSI University and Universiti Putra Malaysia. Tuberculosis (TB) remains a serious threat to human health with the advent of multi-drug resistant tuberculosis (MDR-TB) and extensively drug-resistant tuberculosis (XDR-TB). They have found antrafenine, an anti-inflammatory drug with high promiscuity to inhibit cytochrome P450, as a potential inhibitor for *M. tuberculosis* CYP121. Antrafenine, which emerged as the top CYP121 binder after docking 8,773 compounds from the RepoDB drug repositioning database, is bound to CYP121 with a binding affinity of -12.6 kcal/mol and interacts with important residues at the CYP121 binding site. Upon binding to CYP121, antrafenine affects the dynamics of residues located distantly from the active site. Detailed information on this study is presented on page 1503.

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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