Foreword

Welcome to the **First Issue 2018** of the Journal of Science and Technology (JST)!

JST 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 and is run on a non-profit basis for the benefit of the world-wide science community.

This issue contains **30 articles,** of which **four** are review articles and **13** are regular research articles. This issue also features **eight** selected papers from the 2nd International Conference on Statistics in Science, Business and Engineering (ICSSBE 2015) and **five** papers from the Annual Applied Science and Engineering Conference 2016 (AASEC2016). The authors of these articles hail from several countries namely, **Malaysia**, **Nigeria**, **Australia**, **India**, **China**, **Iran**, **Indonesia**, **Pakistan** and **Thailand**.

The first review article in this issue reports briefly on bioremediation of petroleum hydrocarbon in Antarctica by microbial species (*Syahir Habib, Siti Aqlima Ahmad, Wan Lutfi Wan Johari, Mohd Yunus Abd Shukor* and *Nur Adeela Yasid*), while the second is on improving cost and time control in construction using a Building Information Model (BIM) (*M. M. Tahir, Haron, N. A., Alias, A. H., Harun, A. N., I. B. Muhammad* and *D. L. Baba*). The next review article looks at Android botnets as a serious threat to Android devices (*Shahid Anwar, Mohamad Fadli Zokipli, Zakira Inayat, Julius Odili, Mushtaq Ali* and *Jasni Mohamad Zain*), while the final review article provides an update on Type 1 diabetes treatments, namely, insulin treatment, cell therapy and transplantation (*Homayoun Hani, Mohd-Azmi Mohd-Lila, Rasedee Abdullah, Zeenathul Nazariah Allaudin, Kazhal Sarsaifi* and *Faez Firdaus Jesse Abdullah*).

The regular articles cover a wide range of topics. The first article is on the simulation of a force in micro-scale sensing employing an optical double-ring resonator system (*Youplao, P., Tasakorn, M.* and *Phattaraworamet, T.*). The following articles look at: Distributions, composition patterns, sources and potential toxicity of polycyclic aromatic hydrocarbon (PAH) pollution in surface sediments from the Kim Kim River and Segget River, Peninsular Malaysia (*Mehrzad Keshavarzifard, Mohamad Pauzi Zakaria, Shahin Keshavarzifard* and *Reza Sharifi*); Antiulcer properties of kelulut honey against ethanol-induced gastric ulcer (*Latifah Saiful Yazan, Nurul Amira Zainal, Razana Mohd Ali, Muhamad Firdaus Shyfiq Muhamad Zali, Ong Yong Sze, Tor Yin Sim, Banulata Gopalsamy, Voon Fui Ling, Sarah Sapuan, Nurulaidah Esa, Aminah Suhaila Haron, Fatin Hannani Zakarial Ansar, Ana Masara Ahmad Mokhtar* and *Sharifah Sakinah Syed Alwi*); Revocable and non-invertible multibiometric template protection based on matrix transformation (*Jegede, A., Udzir, N. I., Abdullah, A.* and *Mahmod, R.*); The effects of alkali treatment on the mechanical and chemical properties of banana fibre and adhesion to epoxy resin (*Zin, M. H., Abdan, K., Norizan, M. N.* and *Mazlan, N.*); the use of environmentally friendly bio-oil in the

production of phenol formaldehyde (PF) resin (*Naja Nadiera Omar, Iskandar Shahrim Mustafa, Nurhayati Abdullah* and *Rokiah Hashim*); High intrinsic biosorption efficiency of cattle manure on Cr(VI) as a potential low-cost fibre-rich biosorbent (*Yap, K. L., Lee, C. M., Gan, Y. L., Tang, T. K., Lee, Y. Y., Tee, T. P.* and *Lai, O. M.*); Building a low cost, good quality and safe infinity mirror room for the Suroboyo night carnival amusement park (*Rinda Hedwig, Andrew Nafarin, Ichwanhono Kosasih, Jimmy Linggarjati* and *Wiedjaja Atmadja*); The value of 18F-fluorodeoxyglucose PET (18F-FDG PET) and MRI spectroscopy in underpinning suspicious breast cancer (*Shazreen, S., Shakher, R., Shahrun Niza, A. S.* and *Fathinul Fikri, A. S.*); Vertically integrated moisture flux convergence over Southeast Asia and its relation to rainfall over Thailand (*Kosum Chansaengkrachang, Anirut Luadsong* and *Nitima Aschariyaphotha*); New smoothed location models integrated with PCA and two types of MCA for handling a large number of mixed continuous and binary variables (*Hamid, H., Ngu, P. A. H.* and *Alipiah, F. M.*); The effect of distilled and sea water absorption on mechanical behaviour of short coir fibre epoxy composite/sawdust filler (*Moorthy M Nair, Nagaraja Shetty, Divakara Shetty S.* and *Shambhavi Kamath M*); and Green wall for retention of stormwater (*J. T. Lau* and *D. Y. S. Mah*).

I conclude this issue with 13 articles arising from selected international conferences featuring the following: An investigation into the randomness and duration of PM10 pollution using functional data analysis (*Shaadan, N., Deni, S. M.* and *Jemain, A. A.*); Application of active contours driven by local Gaussian distribution fitting energy to computed tomography images (*Nurwahidah, M., Wan, E. Z. W. A. R.* and *Shaharuddin, C. S.*); A general formula for calculating accumulated amount based on the average lowest balance concept (*Wahab, Z. A., Embong, R., Azmi, A.* and *Isa, N. B. M.*); Feature selection methods, with a focus on the filter and wrapper approaches for maximising classification accuracy (*Yap Bee Wah, Nurain Ibrahim, Hamzah Abdul Hamid, Shuzlina Abdul-Rahman* and *Simon Fong*); The neurocomputing approach for firearm identification (*Nor Azura Md Ghani, Choog-Yeun Liong* and *Abdul Aziz Jemain*); Consolidated backpropagation neural network for Malaysian construction cost indices data with the problem of outliers (*Saadi Ahmad Kamaruddin, Nor Azura Md Ghani* and *Norazan Mohamed Ramli*); Application of the first order of the Markov Chain Model in describing the PM10 occurrences in Shah Alam and Jerantut, Malaysia (*Mohamad, N. S., Deni, S. M.* and *Ul-Saufie, A. Z.*); Application of the system dynamic approach for a family takaful product analysis (*Mohamad, A. I., Tumin, M. H., Noor, N. L. M., Saman, F. M.* and *Amin, M. N. M.*); Monodispersed and size-controllable potassium silicate nanoparticles from rice straw waste produced using a flame-assisted spray pyrolysis (*Asep Bayu Dani Nandiyanto, Rena Zaen, Rosi Oktiani, Ade Gafar Abdullah* and *Ari Arifin Danuwijaya*); Morphodynamics of coastal lagoons, featuring an analysis of multitemporal landsat images of the Segara Anakan lagoon area (*Nandi*); Multi-Hop wireless sensor network performance and energy simulation (*Lilik Hasanah, Heru Yuwono, Ahmad Aminudin, Endi Suhendi, Yuyu Rachmat Tayubi* and *Khairurrijal*); Parallel exponential smoothing using the bootstrap method in R for

forecasting orbital elements of asteroids (*Lala Septem Riza, Judhistira Aria Utama, Syandi Mufti Putra, Ferry Mukharradi Simatupang* and *Eddy Prasetyo Nugroho*); and omnidirectional MIMO antenna with collinear array for LTE applications (*Enjang Ahmad Juanda, Tommi Hariyadi, Abdul Aziz Reguna* and *Arjuni Budi Pantjawati*).

I anticipate that you will find the evidence presented in this issue to be intriguing, thought-provoking and useful in setting new milestones. Please recommend the journal to your colleagues and students to make this endeavour meaningful.

I would also like to express my gratitude to all the contributors, namely, the authors, reviewers and editors for their professional contribution towards making this issue feasible. Last but not least, the editorial assistance of the Journal Division staff is fully appreciated.

JST 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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