

# Foreword

Welcome to the **Fourth Issue 2017** 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 **26 articles**, of which **five** are review articles and **nine** are regular research articles. This issue also features **five** selected papers from the INTROP Research Colloquium 2015 (IRC 2015) and **seven** papers from the 2nd International Conference on Science, Engineering, Law & Management 2017 (ICSELM 2017). The authors of these articles hail from several countries namely, **Mauritius, Morocco, Malaysia, United Kingdom, Iran, Indonesia** and **Pakistan**.

The first review article in this issue reports briefly on current perspectives on high-frequency ultrasound imaging in wound assessment (*Hamidreza Mohafez, Siti Anom Ahmad, Maryam Hadizadeh, Mohammad Hamiruce Marhaban and Mohammad Iqbal Saripan*), while the second is on nano fibre technology in polymer composites (*N. Saba, M. T. Paridah, K. Abdan and N. A. Ibrahim*). The third review article discusses techniques of dispersion of nanoparticles in polymer matrices (*Nurul Reffa Azyan, N., Norkhairunnisa, M., Tay, C. H. and Azmah Hanim, M. A.*). The subsequent two review articles look at fibres, polymer matrices and composites (*Mohd Nurazzi, N., Khalina, A., Sapuan, S. M., Dayang Laila, A. H. A. M., Rahmah, M. and Hanafee, Z.*) and mechanical and thermal properties of natural fibre-based hybrid composites (*Zahra Dashtizadeh, K. Abdan, M. Jawaid, Mohd Asim Khan, Mohammad Behmanesh, Masoud Dashtizadeh, Francisco Cardona and Ishak M.*).

The regular articles cover a wide range of topics. The first article is on a study protocol of spinal morphology, physical performance, quality of life and biochemical markers in adults at risk of osteoporotic fractures (*Chua, S. K., Singh, Devinder K. A., Rajaratnam, B. S., Mokhtar, Sabarul A., Sridharan, R., Gan, K. B., Chin, K. Y. and Lee, R. Y. W.*). The following articles look at: empirical ocean colour algorithms for estimating sea surface salinity in coastal waters of Terengganu (*Md. Suffian, I., Nurhafiza, R. and Noor Hazwani, M. A.*); adjusting outliers in univariate circular data (*Mahmood, Ehab A., Rana, Sohel, Hussin, Abdul Ghapor and Midi, Habshah*); a performance evaluation of flocculation and membrane filtration for microalgae harvesting (*Susanto, H., Fitrianingtyas, M., Kurniawan, L., Rusli, S., and Widiyasa, I. N.*); an artificial immune system paradigm in the Hopfield network for a 3-satisfiability problem (*Mansor, M. A., Kasihmuddin, M. S. M. and Sathasivam, S.*); fuzzy hybrid control of a flexible inverted pendulum (FIP) system using soft-computing techniques (*Ashwani Kharola and Pravin Patil*); the effect of co-solvent addition on glycerolysis of waste cooking oil (*Supardan, M. D., Adisalamun, Lubis, Y. M., Annisa, Y., Satriana and Mustapha, W. A. W.*); an analysis of PWM techniques for inverters driving AC motors (*Rajkamal. R and Anitha Karthi*); and a comparison of advance-based infiltration methods for furrow-irrigated soils (*Irfan Ahmed Shaikh, Aimrun Wayayok, Munir Ahmed Mangrio, Kanya Lal Khatri, Ashifa Soomro and Saeed Ahmed Dahri*).

I conclude this issue with 12 articles arising from selected international conferences

featuring the following: an effect of agar on physical properties of thermoplastic starch derived from sugar palm trees (*Jumaidin, R., Sapuan, S. M., Jawaid, M., Ishak, M. R. and Sahari J.*); the intermetallic growth of sac237 solder paste reinforced with MWCNT (*Azmah Hanim, M. A., Mohamad Aznan, M. N., Muhammad Raimi, R. and Muhammad Azrol Amin, A.*); the application of artificial neural networks for the optimisation of wetting contact angle for lead-free Bi-AG soldering alloys (*Nima Ghamarian, M. A. Azmah Hanim, M. Nahavandi, Zulkarnain Zainal and LIM, Hong-Ngee*); an investigation of the flexural properties and glass transition temperature of kenaf/epoxy composite filled with mesoporous silica for wind turbine applications (*Chai Hua, T. and Norkhairunnisa, M.*); the effects of polymorph transformation via mercerisation on microcrystalline cellulose fibres and isolation of nanocrystalline cellulose fibres (*SaifulAzry, S. O. A., Chuah, T. G., Paridah M. T., Aung, M. M. and Edi S. Z.*); a non-oscillatory scheme for the one-dimensional SABR model (*Nawdha Thakoor*); a design of low-voltage low-power OTA based CCII+ (*Thakral, B., Vaish, A. and Rao, R. K.*); a lightweight authentication protocol based on ECC for satellite communication (*Saroj, T. and Gaba, G. S.*); Taguchi-Grey established optimisation for M2-tool steel with conventional/PM electrodes on EDM with and without powder-mixing dielectric (*Kumar, D., Payal, H. S. and Beri, N.*); Wi-Fi and WiMax QoS performance analysis of high-level-traffic using OPNET modeler (*Khiat, A., Bahnasse, A., El Khaili, M. and Bakkoury, J.*); an ISDA-based precise orbit determination technique for medium earth orbit satellites (*Mishra, S., Singh, G., Singh, M. and Gaba, G. S.*); and a DNA- and LCG-based security key generation algorithm (*Sodhi, G. K., Monga, H. and Gaba, G. S.*).

I anticipate that you will find the evidence presented in this issue to be intriguing, thought-provoking and useful in setting up 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.

**Chief Executive Editor**

Nayan Deep S. KANWAL, FRSA, ABIM, AMIS, Ph.D.

[nayan@upm.my](mailto:nayan@upm.my)