

## Editorial Notes

### Welcome to International Journal of Technology

#### **Theme: Integrating Engineering Design and Technology towards Sustainable Development**

We are pleased to present the inaugural issue of International Journal of Technology (IJTech), an international peer-reviewed journal, dedicated to systematic and empirical research in the areas of engineering design and technology. IJTech aims to provide cutting-edge researches and practices in the management and design of technology, a forum for debate and expression as well as an anchor point for many technology practitioners and academic programs.

The International Journal of Technology (IJTech), previously issued as Jurnal Teknologi that has been circulated since 1970s, is available in hard copy and now can be accessed free on the web. IJTech is a biannual international referred journal and is intended to publish special issues from time to time. Submissions are invited concerning any theoretical or practical treatment of technology design, development, and application. The diversity of topics and methodologies and the quality of the contributions in this inaugural issue are good examples of what the journal aspires to achieve. The quality of a journal's editorial board is critical to its success, and IJTech is fortunate to have on its board a group of scholars in this multi-disciplinary field.

#### **Integrating Engineering Design and Technology**

Global economy, nowadays, has been dominated by the use of technology and engineering advances. Researchers around the globe have been attempting to discover any breakthrough to develop novel and diverse engineering technologies for a wide range of applications. The theme for this inaugural issue is chosen to describe rigorous processes in various engineering fields and creating innovative solutions for sustainability. The precepts for sustainability are that all resources are limited and need to be utilized in harmony with the environment, which will improve quality of life.

The inaugural issue of international journal of technology is proudly presents the following ten selected papers to stimulate debate and to explore the integration of design and technology towards sustainable development in various contexts.

The first paper, written by Hassan Mathkour, Muneer Ahmad, and Hassan Mahmood khan, emphasizes on an integrated approach for statistical genome sequence analysis between genetic datasets. An ORF statistical analysis for genetic data-sets of species of *Chimera monstrosa* and *Polyodontidae* in analyzing the genomic sequences is presented.

Furthermore, Akhmad Herman Yuwono, Yu Zhang, and John Wang outline an investigation on the nanostructural evolution of TiO<sub>2</sub> nanoparticles in the sol-gel phase derived from TiO<sub>2</sub>-polymethyl methacrylate nanocomposites. For this purpose, two sol-gel parameters, i.e. hydrolysis ratio ( $R_w$ ) and pH value, of the TiO<sub>2</sub> precursor solution are varied.

The third paper, written by W.B. Wan Nik, O. Sulaiman, S.G. Eng Giap, and R. Rosliza, provides an evaluation of inhibitive action of sodium benzoate on corrosion behavior of AA6063 in seawater. The electrochemical measurements showed that the presence of sodium benzoate as an inhibitor decrease weight loss, corrosion current densities ( $i_{corr}$ ), corrosion rate, and double layer capacitance ( $C_{dl}$ ) significantly, whilst increasing the polarization resistance ( $R_p$ ).

The fourth paper, written by Djoko M. Hartono, Evi Novita, Irma Gusniani S, and Imelda Ika Dian Oriza, presents the role of water supply and sanitation during flood based on case studies of flood in five regions of Jakarta. The paper describes a mitigation strategy to provide urban infrastructures and community development to cope with flood disaster.

The fifth paper, written by Abdur Rohim Boy Berawi, Raimundo Delgado, Rui Calçada, and Cecilia Vale, evaluates track geometrical quality in High Speed Railway (HSR) networks through different

methodologies. Various methodologies for evaluating the geometrical track quality are presented and compared to each other, i.e. J Synthetic Coefficient, Indian TGI, and also the approach presented in the European Standard EN 13848-5.

The sixth paper, written by Bondan T. Sofyan, Christopher C. Berndt, Marizki Stefano, and Haposan J. Pardede, examines the use of High Velocity Oxy-Fuel (HVOF) sprayed tungsten carbide – cobalt (WC-Co) coatings for high temperature rocket nozzle applications. This paper investigates the effect of surface preparation, in this case the grit blasting process, on the characteristics of the so-formed coating.

The next paper, written by Ojo Kurdi and Roslan Abdul Rahman, presents finite element analysis of road roughness effect on stress distribution of heavy duty truck chassis. In this paper, the authors argue that the determination of static, dynamic, and fatigue characteristics of a truck chassis before manufacturing is important for design improvement.

The eighth paper, written by Hery Haerudin, Andika W. Pramono, Dona Sulistia Kusuma, Aisyiyah Jenie, Nicolas H. Voelcker, and Christopher Gibson, describes the preparation and characterization of Chitosan/Montmorillonite (MMT) nanocomposite systems. The AFM analysis showed that the composite has particle size of 100 nm and less confirming that nano-composite is successfully produced. Addition of CNSL as plasticizer improved the tensile strength by 10% and the elastic modulus by almost 18%.

The ninth paper, written by Mohd Zul Helmi Rozaini, Peter Brimblecombe, Mohd Aidil Adhha Abdullah, Mazidah Mamat, Ku Halim Ku Bulat, and Armiza Ahmad, provides a chemical model for composition and atmospheric processing of mixed organic-inorganic aerosol. The physical state of aqueous solution containing mixed organic/inorganic electrolytes and dicarboxylic acids is presented.

The last paper, written by Rahmat Nurcahyo and P. Heru Kristihatmoko, presents an implementation of lean concepts using quality tools to reduce waste as a result of product defects. The paper describes the sources of defects due to sealing failure, and then develops the proposed remedial action plan to reduce these defects.

I hope this inaugural edition of IJTech conveys some new insights in the way we conduct our research. I would be pleased to accept and respond to any comment and enquiry you may have on the direction and content of IJTech and invite you to join us in this venture by sending your work to the journal for consideration.

Last, but certainly not least, I want to take this opportunity to thank Dr. Nyoman Suwartha, managing editor of IJTech and every member of IJTech for their time, effort, and hard work throughout this process. I am also grateful to all authors, scholars, and fellow faculty colleagues who have provided invaluable advice and contributed in various ways to this publication. IJTech stands as a testament to the hard work and dedication of all of its members, and I will be extremely grateful for all of your help and support in turning our collective vision and mission into this inaugural issue.

With warmest regards from editorial desk,



Dr. Mohammed Ali Berawi  
**Editor-in-Chief**  
International Journal of Technology