Foreword and Editorial

International Journal of Advanced Science and Technology

We are very happy to publish this issue of an International Journal of Advanced Science and Technology by Science and Engineering Research Support Society.

This issue contains 6 articles. Achieving such a high quality of papers would have been impossible without the huge work that was undertaken by the Editorial Board members and External Reviewers. We take this opportunity to thank them for their great support and cooperation.

The paper “Design New Rule-based Effect Fuzzy Controller” presents a method to select rule base size depending on the nonlinear parameters present in the system in parallel with robust sliding mode controller. The significance of the proposed method is tested on highly nonlinear second order system (robot manipulator) using modified rule bases. A criterion is developed for selection of rule base depending on amount of type of system: nonlinearity, multi input- multi output, time variant.

Paper “Business Analytics using Random Forest Trees for Credit Risk Prediction: A Comparison Study” aims to evaluate the performance of different Machine Learning algorithms for credit risk prediction with more focus on Random Forest Trees. Several experiments inspired by observation and literature illustrate the potentials of computer-based model in classifying a number of bank history records. However, enhanced classification outcomes require tuning the randomness and tree growing parameters of the Random Forests algorithm. The model based on Random Forest Trees overperformed most of the other models. Moreover, such a model has various advantages to business experts as the ability to help in understanding the relations between the analyzed attributes.

In the paper “Error Rate Performance of Binary Modulation through Wireless Body Area Networks” evaluated the performance of one of the very crucial simulation parameter i.e. the carrier frequency have been for its different values by taking Binary Phase Shift Keying modulation in the WBAN channel model. The power profile for WBAN channel have been generated by using Rayleigh and Weibull distributions. The evaluation is done by calculating the value of Bit error rate for the given values of Signal to noise ratio at different carrier frequencies for BPSK.

The paper “Verification of Dynamic Relaxation (DR) Method in Isotropic, Orthotropic and Laminated Plates using Small Deflection Theory” presented Dynamic Relaxation (DR) method for the analysis of geometrically linear laterally loaded, rectangular laminated plates. The analysis uses the Mindlin plate theory which accounts for transverse shear deformations. A computer program has been compiled. The convergence and accuracy of the DR solutions of isotropic, orthotropic, and laminated plates for elastic small deflection response are established by comparison with different exact and approximate solutions. The present Dynamic Relaxation (DR) method shows a good agreement with other analytical and numerical methods used in the verification scheme.
This paper “Investigation on the Physical Properties and Use of Lumampao Bamboo Species as Wood Construction Material” focuses on investigating the physical properties and use of lumampao bamboo as a substitute to wood constructional material. The development of lumampao bamboo may potentially bring some positive outcomes and contribute to relieving the deforestation issue. To be able to develop the lumampao bamboo potential either in Philippines or other countries, some tasks are still needed to do beforehand. One of the interesting insights in the study shows that the physical properties of lumampao bamboo may potentially become an alternative to wood constructional material under certain circumstances.

The paper “Absorption Isotherm Study of Mn2+ on MnO2 and FeO - coated zeolite from aqueous solution” is concerned with the removal of Manganese from aqueous solution by adsorption onto low cost adsorbent. Manganese oxide coated zeolite (MOCZ) and iron oxide coated zeolite (FOCZ) were investigated as an adsorbent for the removal of Mn2+. Batch adsorption experiments were performed as a function of pH, contact time and Mn concentration. The optimum conditions for maximum adsorption by MOCZ were attained at pH=7, Mn concentration of 5 mg/L and for FOCZ at pH=8, concentration of 4mg/L. Manganese detection was carried out by Inductive Coupled Plasma - Atomic Emission Spectroscopy (ICP-AES).

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