

Editorial

I. From the Editor

On behalf of the WIJE Publications and Editorial Board, I would like to update you on the progress of our WIJE Website Project. Though we have made great progress there have been some setbacks in the past few months. We have been trying to catch up and anticipate that the digitising of the journal's paper archives would be completed within the first half of 2014.

The Department of Mechanical and Manufacturing Engineering, via its Industrial Engineering Office at The University of the West Indies, is organising the third Industrial Engineering and Management (IEM2014) Conference in December 2014. The WIJE supports this initiative: A 'Call for Papers' is included in this issue. A selection of strong papers would be recommended for fast track publication at WIJE, subject to the results of peer review exercises.

II. About This Volume

Volume 36 Number 2 includes ten articles. The relevance and usefulness of respective articles are summarised below.

R. Hosein, V. Maharaj and C. Abder, "An Experimental Investigation of Formation Damage Caused by Commonly Used Water-Based Drilling-Mud Onshore Trinidad", discuss the analysis of rock samples from four of the main oil producing reservoirs onshore Trinidad. Permeability measurements before and after treatment of the reservoir samples were conducted to determine the extent of formation damage. X-Ray Diffraction tests were performed to determine the type and percentage of clay present and Scanning Electron Microscope images were obtained to show how the clays were distributed in the formations.

J.R.F. Lalla and A. Mwashu, "Investigating the Compressive Strengths of Guanapo Recycled Aggregate Concrete as Compared with that of its Waste Material", compare the compressive strength parameters of concrete manufactured using recycled Guanapo coarse and fine aggregates and that of its source waste material using sustainable blended cement. Compressive strength testing was conducted according to ASTM C39 and correlations amongst the data were determined using the one-way ANOVA statistical method. The results show that waste material from construction demolition waste (CDW) can easily be recycled to produce concrete of comparable properties to that of its source waste material.

J. Warrick and E.I. Ekwue, "Preliminary Feasibility of Large-Scale Treated Wastewater Re-use for Agriculture in Trinidad and Tobago", examine the existing difficulties in allocating sufficient water for irrigated agriculture in the nation. Evidence shows that sufficient quantities of treatable wastewater exist, particularly in North Trinidad,

and that these could be used to significantly address the agricultural water demand for agricultural lands. Proper legislation, effective treatment of wastewater from treatment plants, and public education to advise on the merits and demerits of using wastewater effluents as irrigation water, would be important.

R.J. Stone, "Homogeneity Assessment of Trinidad and Tobago's Surface Air Temperature Data", presents the findings from a homogeneity assessment of the annual mean maximum and minimum surface air temperature data series for Trinidad and Tobago over the past decades. Four statistical change point detection tests were employed. Results show that the data must first be homogenised before they could be used to reliably detect changes and trends in the broader-scale climate. It is recommended that at least two reference stations should be established to assist with the data homogenisation process.

K. Chandrasekaran and G.S. Puneekar, "Severity of Lightning Return Strokes: Simulation Study and Review Notes", compare the results obtained through simulation of electromagnetic fields. The "typical" first (FS) and subsequent (SS) lightning return strokes have been computed using "Modified Transmission Line with Linear current decay" (MTLL) model. The severity of lightning return strokes (FS/SS), as a function of radial distance, is investigated. The effect of worst-case-ground-conductivity on this ratio is discussed. The MTLL model based comparison on em-field FS/SS ratio for both perfect and worst case-ground conditions is reported in the paper.

E.J. Peters, "Measuring the Severity of Dry Seasons in the Grenadines", analyses dry season rainfall for the Grenadines and proposes a new methodology for measuring the severity of dry seasons and droughts for the islands. The proposed severity index is based on the well-established standardized precipitation index. The application of the new index to dry seasons over past 80 years shows that the 2009/2010 drought was one of the worst in the history of the Grenadines and that dry seasons are becoming more pronounced.

K.D. Thomas, N.B. Williams and M.A. Trotz, "The Sustainability of Ecotourism Activities: Development of an Accessible, Applicable, and Efficient Tool for Assessment in the Caribbean Region", attempt to develop a facilitative tool with sustainability indicators for managing ecotourism activities in the region. Responses were sought from a community survey, environmental checklist, screening and scoping exercise and semi-structured interviews. The data were evaluated for five different scenarios representing demographic and social changes and translated into target plots for efficient assessment purposes.

E.A. Wilson and M. Kolokotroni, "Modelling the Isothermic Heating Process in a Charcoal Bed of a Solar Powered Adsorption Cooling System", address a problem

associated with Solar Powered Adsorption Cooling (SPAC) systems. The temperature profile modeling of the isosteric-heating-process establishes a time-related formulation that gives the temperature, at any radius, across a cylindrical shaped bed comprising of charcoal/methanol pair of adsorbent/adsorbate; and the results from modeling compare favorably with the measured temperature profiles obtained from the experiments.

O.C. Falloon, G.S.H. Baccus-Taylor, and D.A. Minott, "A Comparative Study of the Composition of Tree-Ripened versus Rack-Ripened Ackees (*Blighia sapida*)", compare proximate, mineral and fatty acid composition of raw, mature arils of tree-ripened and rack-ripened fruits. It was found that the nutritional profiles of tree-ripened and rack-ripened ackees were generally similar. Higher quantities of crude fat and crude protein in rack-ripened ackees were probably a direct consequence of lower residual moisture in the said ackees.

S. Bahadoorsingh, L.V. Bhairosingh and C. Sharma, "A Methodology for Dynamically Adjusting A Transmission Line Rating on an Island Grid in the Caribbean", describe the development of an overhead dynamic line rating software for use at the Trinidad and Tobago Electricity Commission (T&TEC) transmission network. Ampacity calculations are performed using the IEEE 738 standard and implemented in MATLAB with an accompanying GUI. Results indicate that the line usage efficiency in the transmission network could be increased.

III. Acknowledgements

On behalf of the Editorial Office, I gratefully acknowledge all authors who have made this issue possible by submitting their research. We greatly appreciate the voluntary contributions and unfailing support that our reviewers give to the Journal.

Our reviewer panel is composed of academics, scientists, and practicing engineers and professionals from industry and other organisations as listed below:

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The views expressed in articles are those of the authors. This does not necessarily reflect the opinions or policy of the Journal.

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