Applied Science and Engineering Progress

Vol. 15, No. 3, July–September 2022

Contents

Editorial Corner

Poly- and Per-fluoroalkyl Substances (PFAS) in Water Environment Debraj Bhattacharyya and Malinee Sriariyanun

Research Articles

An Efficient IWOLRS Control Technique of Brushless DC Motor for Torque Ripple Minimization *P. Rajesh, Francis H. Shajin and G. Kodeeswara Kumaran*

Association of *MTHFR* (C677T and A1298C) Gene Variants Polymorphisms with Migraineurs: A Case-control Study

Anne Sahithi Somavarapu Thomas, Radha Saraswathy and Muthu Thayanithy

Association of Serum Copper Levels and Amine Oxidase Copper Gene 1 (AOC1) with Migraineurs Anne Sahithi Somavarapu Thomas, Radha Saraswathy, Anuhya Anne and Muthu Thayanithy

Avoiding Covid-19 Using a 3D Digital Mock Up and Augmented Reality with Cobot in Digital Factory

Athakorn Kengpol and Kalle Elfvengren

Binary Integer Programming Approach to Optimal Content Placement in Cloud-based Content Delivery Networks

Nay Myo Sandar

Bioethanol Production by *Pichia stipitis* Immobilized on Water Hyacinth and Thin-shell Silk Cocoon

Suchata Kirdponpattara, Santi Chuetor, Malinee Sriariyanun and Muenduen Phisalaphong

Comparative Study of Adaptive Hamiltonian Control Laws for DC Microgrid Stabilization: An Fuel Cell Boost Converter

Damien Guilbert, Babak Nahid-Mobarakeh, Serge Pierfederici, Nicu Bizon, Pongsiri Mungporn and Phatiphat Thounthong

Differential Influence of Imidazolium Ionic Liquid on Cellulase Kinetics in Saccharification of Cellulose and Lignocellulosic Biomass Substrate

Prapakorn Tantayotai, Marttin Paulraj Gundupalli, Elizabeth Jayex Panakkal, and Malinee Sriariyanun, Kittipong Rattanaporn and Debraj Bhattacharyya

DNA Binding Activity of Marine Shrimp LvProfilin

Yanisa Laoong-u-thai, Warapond Wanna and Autaipohn Kaikaew

See Inside Cover

Academic Enhancement Department (AED) King Mongkut's University of Technology North Bangkok (KMUTNB) 1518 Pracharat 1 Road, Wongsawang, Bangsue, Bangkok 10800, Thailand Tel. (66) 2555-2238-40, E-mail: asep@op.kmutnb.ac.th http://www.ijast.kmutnb.ac.th



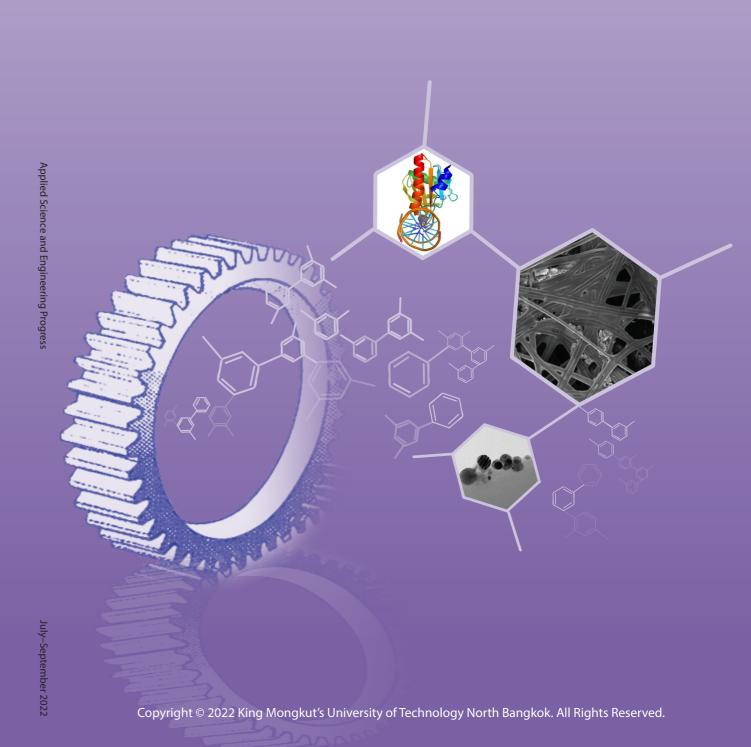


Vol. 15, No

Applied Science and Engineering Progress

Vol. 15, No. 3, July–September 2022

E-ISSN: 2673-0421



Paper Citation is as Followed: Applied Science and Engineering Progress E-ISSN: 2673-0421

Schedule

no. 1 January–March no. 3 July–September no. 2 April–June no. 4 October–December

Editorial Policy

Paper, comprising review and report of original scientific research, will be judged for publication on the basis of evaluation by independent reviewers. Such reports and articles include those containing substantial supported theories, innovative work, substantial experimental results, useful and constructive discussion, and review articles standardized to regional or international acceptance. Each volume will comprise four issues. In addition, special issue containing the proceedings of conferences may be produced. These will be designated as supplements to the appropriate volume and number. An electronic journal is also provided on the website (http://www.asep.kmutnb.ac.th). The editors reserve the right to require revision of the submitted manuscript as a condition for final acceptance.

The university and the editorial board claim no responsibility for the contents or views expressed by the authors of individual articles. Copying allowed freely provided acknowledgement is made thereof. All articles submitted for publication will be assessed by a group of distinguished reviewers.

Focus and Scope

Applied Science and Engineering Progress (ISSN: 2672-9156, E-ISSN: 2673-0421) is an international, double-blind peer-reviewed by at least two independent reviewers, open access scientific journal, free of charge, published by King Mongkut's University of Technology North Bangkok (KMUTNB) since 2008. Applied Science and Engineering Progress published original research articles, reviews, and editorial corner in areas of applied science and engineering. The journal also publishes high quality and peer-reviewed papers presented at conference hosted/co-hosted by KMUTNB to expand the research connection between scientists and engineers. Applied Science and Engineering Progress also aims to introduce research progress of applied science and achievements of engineering development to the world community by demonstrating the significance of research investigations and demonstrations. Accepted manuscript to Applied Science and Engineering Progress will be published every quarter in PDF formats (March, June, September, and December).

Applied Science and Engineering Progress consists of two major sections in Applied Science and Engineering field:

Applied Science - This section contains topics in the multidisciplinary domain of applied science and technology on solving technical problems and developing the application of academic research. The focus of this section target to disseminate the progress of the analysis of problem, finding solution and synthesis of knowledge in the fields such as bioprocess technology, chemistry, information technology, and other topics related to applied science.

Engineering - This section contains topics in the combination of engineering, invention and innovation and focuses on solving technical problem. The targets of this section includes research works in applications of engineering and technology such as electrical and electronics, industrial production, mechanical engineering, and other topics related to engineering.

Indexed by SCOPUS, Thai-Journal Citation Index Centre (TCI), ASEAN Citation Index (ACI), CrossRef, Google Scholar and SCITE

Website for Submissions: http://www.ijast.kmutnb.ac.th

Contact: asep@op.kmutnb.ac.th

Copyright © 2022 by King Mongkut's University of Technology North Bangkok. All rights reserved.

No part of this publication may be reproduced stored or transmitted in any material form or by any methods including electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the publisher, except in accordance with the provisions of the Copyright Design and Patents Act 1988.

Contents

Research Articles (Continued)

Effective Data Augmentation and Training Techniques for Improving Deep Learning in Plant Leaf Disease Recognition

Prem Enkvetchakul and Olarik Surinta

Evaluation of Eutrophication State of Mae Kuang Reservoir, Chiang Mai, Thailand by Using Carlson's Trophic State Index

Songpon Saetang and Jaroon Jakmunee

Explicit Formulas of ARL on Double Moving Average Control Chart for Monitoring Process Mean of ZIPINAR(1) Model with an Excessive Number of Zeros

Kobkun Raweesawat and Saowanit Sukparungsee

Facile Green Synthesis of Silver Nanoparticles Using *Rubus rosifolius Linn* Aqueous Fruit Extracts and Its Characterization

Marilen M. Martin and Rodolfo E. Sumayao Jr.

Influence and Possibility of Using Limestone Dust Replacement of Sand for Sustainability in Concrete Production

Nuttawut Intaboot and Kriangkrai Chartboot

Measurement of Transport Number of Lithium in Glycerol Assisted by Fourier Transform Spectroscopy Analysis: Progress towards Elaboration of Optimal Electrolyte of Friendly Environmental Battery Fatima Moulay, Mostefa Kameche, Fatima Lahmar, M'hamed Mehouen, Lahouaria Annag and Hamida Nouria Baba Ahmed

Mining Bug Report Repositories to Identify Significant Information for Software Bug Fixing Bancha Luaphol, Jantima Polpinij and Manasawee Kaneampornpan

Numerical Modeling for Corrosion Rate between Heat-affected Zone and Unaffected Base Metal of Galvanized Steel Welded by Brazing

Adisak Pinyo, Sompong Bangyeekhan, Trinet Yingsamphancharoen and Aphichart Rodchanarowan

Optimal Design and Techno-economic Analysis for Corncob Particles Briquettes: A Literature Review of the Utilization of Agricultural Waste and Analysis Calculation

Asep Bayu Dani Nandiyanto, Nissa Nur Azizah and Gabriela Chelvina Santiuly Girsang

Optimization for Epoxidation of Malaysian *Jatropha curcas* Oil Based Trimethylolpropane Ester Biolubricant

Noor Hafizah Arbain, Jumat Salimon, Nadia Salih and Waled Abdo Ahmed