

International Conference of Emerging Challenges in Engineering and Current Technology (ICECTIII 2021)

IOP Conference Series: Materials Science and Engineering
Volume 1176

Kuala Dungun, Malaysia
30-31 March 2021

Editors:

Nurbaiti Wahid	Nurul Huda Kamarulzaman
Fatimah Nur Mohd Redzwan	Nurul Hidayah Md. Noh
Norzila Mohd	Sarah Yusoff
Norhanifah Abdul Rahman	

ISBN: 978-1-7138-4636-9
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2022)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Preface

Peer review declaration

Coal Bottom Ash as a Potential Adsorbent for CO ₂ Capture	1
<i>N H A Rani, N F Mohamad, M Onn, M J Jalil, N Muda</i>	
Effect of different red palm oil volume on characteristics and degradation of polylactic acid/zinc oxide film	8
<i>S F A Karim, J Jai, N A Saiful, K H K Hamid, N Kamarudin</i>	
The Separation of Oily Water Mixture Using Membrane	16
<i>N S I Chik, N Z K Shaari, S A Shamsudin</i>	
Characterisation of microfibrils cellulose isolated from oil palm frond using high-intensity ultrasonication	22
<i>M M Yashim, M Mohammad, N Asim, A Fudholi, N H Abd Kadir</i>	
Mechanical properties of bio-epoxy resins and synthetic epoxy resins blends	32
<i>A Derahman, Z Z Abidin</i>	
Toxicity Study of Ananas Comosus and Centella Asiatica as Active Ingredients in Anti-inflammatory Lotion.....	41
<i>N S A Rahman, N Saadon, F M Tap, N A Yusof</i>	
Effectiveness of Annona Squamosa and Annona Muricata Seed Extracts as Ingredients in Bio-pesticides Spray	47
<i>Z Irwan, W F W Kamarudin, U A S A Korish, N A Z, A S Rusli, S Sallehuddin</i>	
Effects of Disposed-water from Barapukuria Coal Mine, Dinajpur, Bangladesh on Agriculture and Aquaculture	55
<i>M T Rahman, A H Khan, B M Negash, K Sultana, M A Hasan, A Askary, F Rubbi, L Das</i>	
Removal of Reactive Orange 16 Dye using Casuarina equisetifolia seeds as Packing Media for Microbial Biofilm Formation	67
<i>W H W Osman, M M Tan, A A A Rashid, N Mohd, R Mohammad</i>	
Optimization of AB Fertilizer for Plant Growth in Fertigation Using Central Composite Design.....	76
<i>S F S Draman, S M Shukri, N S I Ishak, A S A Samad, A F Pauzi</i>	
Elucidation of morphology developed of Ca _x Ce _y /ZrO ₂ solid catalyst for the production of lactic acid from glycerol conversion	83
<i>N Razali, A Z Abdullah</i>	
The Design of IoT Dengue Alert Supervisions System with RFID Access	91
<i>W M K W Mamat, M Kassim, S Shahbudin, N Ya'acob</i>	
Three-Phase Induction Motor Controller Design Based on Hysteresis Voltage Control	101
<i>M S N Ismail @ Marzuki, A I M Arifin, W A K W Chek, A H Hussian, F R M Tazudin, S A Zulkifli</i>	

A Study on Different Slot Position for Designing Dual Band Microstrip Antenna for 5G Wireless Communication	108
<i>N A M Nasir, H Ja'afar, H Baba, N H A Aziz</i>	
Electronic Voting Machine (EVM) Using Infrared Detection Technique on Arduino Platform.....	114
<i>S I Ismail, S A C Kar, R Abdullah, M A H M Amri, M Z Ismail, N N Nik, M Zaki</i>	
Water Quality Monitoring System for Fisheries using Internet of Things (IoT).....	120
<i>N Ya'acob, N N S N Dzulkefli, A L Yusof, M Kassim, N F Naim, S S M Aris</i>	
Portable Real-Time BMI Nutritional Advice	133
<i>A D Ab Karim, N A Md Lazam, N A Mohd Yahya, S Abdul Rahman</i>	
High Frequency MOSFET Charging Circuit Using Series Parallel DC-DC Resonant Converter for Wireless Power Application	142
<i>N A A Nuawi, M F M Zin, E A Kadir, M N Seroji</i>	
High Selectivity Hydrogen Gas Sensor Using Pd/ZnO Tapered Optical Fiber	150
<i>N A M Yahya, M R Y Hamid, B H Ong, M A Mahdi, M H Yaacob</i>	
Students' Performance Prediction using Artificial Neural Network	159
<i>N Ahmad, N Hassan, H Jaafar, N I M Enzai</i>	
The development of IoT Smart House Automation System controlled wirelessly via OpenHab central server	167
<i>F N M Redzwan, A H F Suhaimi, A K Husaini</i>	
Design and Fabrication of Kayak Carrier	177
<i>H Ghazali, N H Mas'aud, N A Rahman</i>	
Palm Oil Fuel Ash and Mussel Shell Powder as Supplementary Cementitious Materials in Non-Load Concrete Brick.....	187
<i>A Z M Zahid, M M Zin, N Z Saifullizam, N Khalid, S F Kamaruddin, W S W Chik</i>	
Effect of Petroleum-Based Oil Towards Physicochemical Properties of Natural Rubber-Based Magnetorheological Elastomers	200
<i>N M Zaki, N A Yunus, M S Yusoff, F Ahmad, N Wahid</i>	
Fire-Resistant Properties of Modified Epoxy Based Intumescence Fire-Retardant Coating: Hybridizing of Oyster Shell Powder with Glass Frit.....	207
<i>Y X Lee, F Ahmad, S Kakooei, Y Azmi, S Kabir</i>	
Study on the Comfort of 3 Local Hijab Sport Brand on Muslim Woman during Physical Activities.....	216
<i>A Baharudin, A H A Hafidz, N M Roslan, I N Zahir, N A Norjeferi, A Musa, M R Ahmad</i>	
Piper Nigrum (Green Corrosion Inhibitor) as a Modified Quenchant in Heat Treatment of Ductile Iron	226
<i>M F Idham, S H Nasip, N Hazirah, B Abdullah, S K Alias</i>	
Constructing a Blueprint of a Kolek	235
<i>N A A Rahman, M A Johan, N M K N Ismail, S Ahmad</i>	
Effects of Waste Glass Powder Filler on Intumescence Coating for Steel Structures Application.....	243
<i>Y M Azmi, F Ahmad, S N Razak, M A H A Hadi, S Kabir, G H Yeoh</i>	
A smart building security system with intelligent face detection and recognition	251
<i>M H Khairuddin, S Shahbudin, M Kassim</i>	

Design and development of student attendance system using QR-Code for UiTM Cawangan Terengganu..... <i>S S Hamzah, U F Bahrin, S N S Yasin, Z D Eri, H A M A Majid</i>	261
An artificial neural network model for forecasting air pollution..... <i>W D W A Manan, N R Abdullah</i>	268
A study of multiple reward function performances for vehicle collision avoidance systems applying the DQN algorithm in reinforcement learning..... <i>N J Zakaria, M I Shapai, N Wahid</i>	280
Semiconductor defect classification by using cascaded convolutional neural network..... <i>P N A Tajudin, M I Shapai</i>	293
Predicting vehicle parking space availability using multilayer perceptron neural network..... <i>M H Ismail, T R Razak, R A J M Gining, S S M Fauzi, A Abdul-Aziz</i>	302
Technology acceptance model (TAM) for analysing cloud computing acceptance in higher education institution (HEI)..... <i>M T Amron, N H M Noh</i>	310
Extending technology acceptance model (TAM) to measure the students' acceptance of using digital tools during open and distance learning (ODL)	318
<i>N H M Noh, R Raju, Z D Eri, S N H Ishak</i>	
The development of a preschool event management system using usability heuristic theory..... <i>N S M Yusoff, N A A A Bakar, N M N Daud</i>	328
Designing Roller Coaster Loop's By Using Extended Uniform Cubic B-Spline..... <i>N M Sukri, S M Nor-Al-Din, N K Razali, M A A Mazwin</i>	339
Application of TOPSIS Method for Decision Making in Selecting the Best New Car in Malaysia..... <i>S M Nor-Al-Din, N K Razali, N M Sukri, M A Rosli</i>	346
Potential and Opportunities of Building Information Modeling (BIM) For Housing Maintenance	353
<i>A M Sarman, C Jaison, E M Mazlan, N N Nazeri</i>	
Construction of a Tributyrin Calibration Curve using High Performance Liquid Chromatography	360
<i>F Atan, A H Mohamed, N N Dzulkifli, Z M Zain, N M Ahmad</i>	
Detection of Myristic and Palmitic Acid in Butter By Hydrolysis And Acid Methylation	367
<i>N S Tapak, S Senin, A H Mohamed, N N Dzulkifli, Z M Zain, N M Ahmad</i>	
Production and Characterisation of Cheddar Cheese-like from Cocos Nucifera L.	378
<i>S N Ismail, M S A Latip, M A Mohamad</i>	
Effects of Different Drying Methods on Antioxidant Properties of Malaysian Ginger..... <i>I Mustafa, N L Chin, Y A Yusof, M F Husin</i>	384
Lithology Identification, Shale Volume Estimation and Formation Water Saturation of Fenchuganj Gas Field Using Wireline Log Data	393
<i>M Rahman, M R Mojid, I M Khan</i>	
Eco-Friendly Hybrid Solar Cells using Eugenia Claviflora as New Alternatives Sensitizer to TiO ₂ /PEDOT:PSS..... <i>N H Kamarulzaman, H Salleh, A N Dagang, M S M Ghazali, N Ishak, M Abdullah, S M Muda</i>	404

Author Index